ASIAN BOND MARKETS INITIATIVE BRIEF No. 13

Solving Adoption Challenges of New Technology: The Case of ISO 20022 for Cross-Border Payment Messages

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About This Brief

The Asian Bond Markets Initiative (ABMI), an initiative of ASEAN+3, has been convening the ASEAN+3 Bond Market Forum (ABMF) and the Cross-Border Settlement Infrastructure Forum (CSIF) as platforms for public and private sector institutions. These forums support the development of local currency bond markets; analyze and discuss market trends; facilitate knowledge-sharing, policy dialogue, and recommendations, including on digitalization and data transformation; and address challenges common to all regional market stakeholders.

The Asian Development Bank (ADB) acts as secretariat to ABMF, CSIF, the newly established Digital Bond Market Forum, and the ABMI.[1]

This ABMI Brief series provides insights into professional bond markets, their development, and necessary or desirable components to issuers, investors, market intermediaries, regulatory authorities and policymakers, academia, and other interested parties. Individual briefs are dedicated to specific subjects discussed in ABMF and CSIF, given their relevance for domestic bond markets and the needs and interests of their constituents.

This ABMI Brief No. 13 covers the need for standardization and coordinated implementation—key subjects of the CSIF curriculum—using the example of ISO 20022 implementation.

KEY TAKEAWAYS

- The transition from unstructured data practices to structured data has just started for Swift MT standard users. The process requires continuous improvement and phased implementation to achieve its full benefits in the coming years, if not decades.
- A messaging ecosystem utilizing ISO 20022 as a method for interoperability with high data quality is emerging. However, cross-border payments remain in an under-governed state where underlying practices are still evolving and the implementation gap continues to widen.
- The five inhibitors and possible remedies outlined in this brief serve as beacons for adopters. Addressing these considerations will allow firms to navigate investment challenges, align objectives with practices, and ensure responsible implementation in a dynamic environment.
- Given the fragmentation in the payments industry, there is a need for an implementation-focused orchestration effort—an "interim body" bridging technology and business, the public and private sectors, and standards development with market practices.
- As an extension, mature but fragmented markets could develop a licensing regime for cross-border payment services and delegate supervisory authority to such an interim body—as seen, for example, in securities dealerships.

[1] ASEAN+3 refers to the 10 members of the Association of Southeast Asian Nations (ASEAN) plus the People's Republic of China, Japan, and the Republic of Korea.

ADB

Introduction

The business of cross-border payments, particularly for banks, is going through a once-in-decades transition from unstructured data practices to structured data practices. Despite extensive industry discussions, pilot programs, and targeted technological innovations, wide-scale adoption of new financial technology continues to be fragmented, especially with regard to cross-border payments. A significant portion of the market is already experiencing transition fatigue as Swift MT message users work to complete their transition of payment messages to ISO 20022, the global standard for financial messaging, by November 2025.

Unlike personal technology upgrades—where individuals transition seamlessly through automatic updates—industry adoption of technology operates under entirely different principles. Legacy infrastructure, a lack of fundamental practices, regulatory constraints, operational costs, and inadequate market governance inhibit firms from implementing new standards efficiently.

This brief examines five key inhibitors that prevent industry-wide adoption of technology, specifically using the case of ISO 20022 migration in cross-border payments. By addressing these inhibitors, firms can refine their transition strategy, optimize business implementation, and ultimately achieve long-term technology adoption success.[2]

Cross-Border Payments—Backdrop and Context

As the world becomes more connected, cross-border payments have become more complex and less forgiving in terms of mishandling data. With new technology, new products, new service providers, and changes in customer buying behavior, coupled with more regulation, cross-border payment processing now requires the handling of more data across different types of service providers in often extended "payment chains" consisting of multiple parties.

The business functional processes themselves involve multiple disciplines including sanctions compliance, financial crime compliance, fraud prevention, data protection, client account management, client reporting, and regulatory reporting. In short, it is not an area where one can rely on practices traditionally developed based on trust among a handful of skilled experts employed by banks who are masters of different nuances in each market.

The business of cross-border payments has also become the front line for machine learning and applied artificial intelligence (AI), where there is a new need to ensure that the underlying data provided to the machines are well defined and granularly structured so that human assistance or interpretation is not needed to identify the required data and process it.

Inhibitors of Transition

There are five known inhibitors of transition from one technology to another in terms of industry adoption. These can be summarized as follows: (i) the users do not understand the purpose of the transition to new technology and what problem it solves, (ii) the users do not have the right measurement or standard to benchmark the proposed technology benefits, (iii) multiple options exist and the differences all appear marginal, (iv) the affected business does not have the underlying practices in place, and (v) market governance does not reflect the underlying user needs.

This brief describes these inhibitors and their potential remedies as beacons guiding the development of appropriate market governance using cross-border payments as an example. Having appropriate assumptions about, if not answers on how to address, these inhibitors will guide the transition strategy that allows users to adopt new technology into their services and contribute to overall business success.

The following five sections describe each of these gaps and the necessity of addressing them. Problems are described in general terms and then translated into specific issues in business terms, taking into account the migration to ISO 20022 payment messages underway in

[2] This ABMI Brief was authored by Masayuki Tagai, representative director and lead counselor for SAVEMERI (https://www.savemeri.org), and Yuji Yamashita, principal financial sector specialist, Economic Research and Development Impact Department of the Asian Development Bank, with the support of Roselle Dime, Asian Development Bank consultant. SAVEMERI was established as a Japanese general incorporated association with a not-for-profit orientation, advocating for responsible implementation of international standards such as ISO. Masayuki Tagai has been an international expert for the ASEAN+3 Bond Market Forum since its inception in 2010, focusing on global securities settlement practices and the promotion of globally accepted identifier standards as well as common market practices.

the banking system. The discussion then expands to provide potential solutions that address these inhibitors in an industry-coordinated way.

1. Unclear Purpose and Misalignment of Business and Technology Objectives

The need to clarify the purpose using consistent language and quantify the value

The adoption of ISO 20022–based structured data messaging in cross-border payments must be preceded by fundamental changes in risk-sensitive financial processes. However, many firms fail to articulate how transitioning from legacy unstructured data practices (i.e., continued use of unstructured elements such as in Swift MT messages) to using structured data formats (i.e., using structured ISO 20022 message formats) yields direct, quantifiable business advantages.

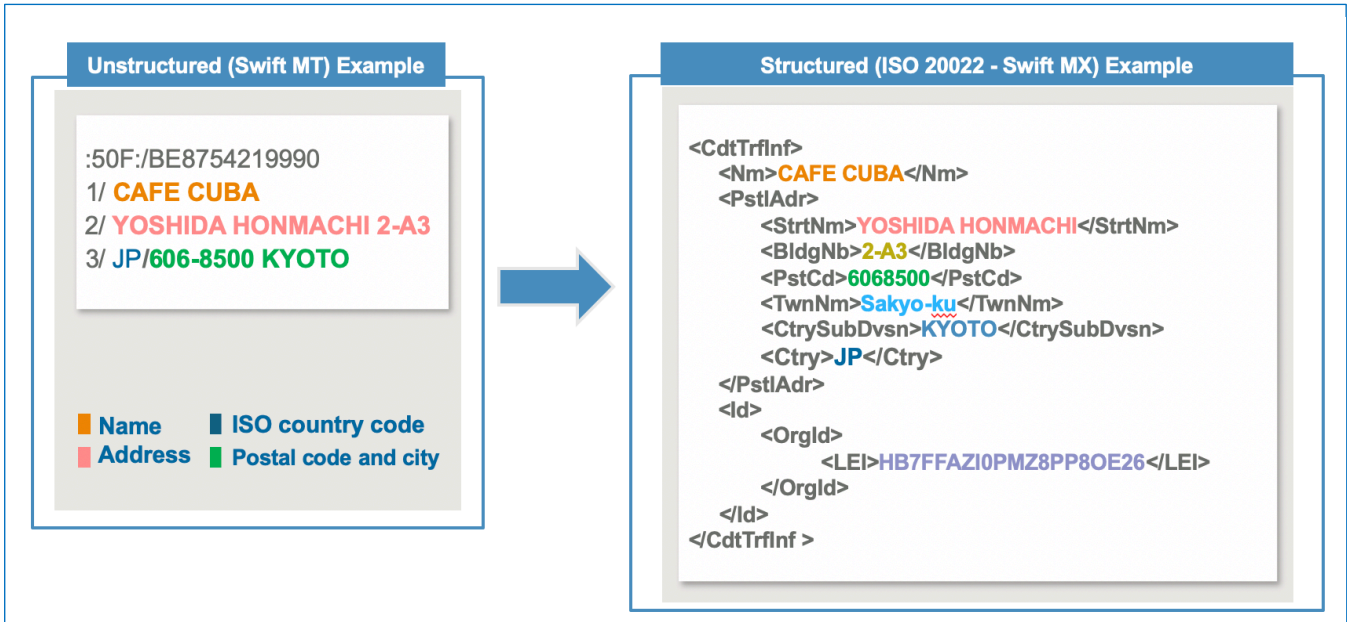
Technology investments are traditionally justified on revenue impact, but foundational infrastructure shifts—such as transitioning to structured data—do not immediately show direct profitability. This leads firms, particularly their chief financial officers (CFOs), to question the necessity of long-term investments when short-term returns are uncertain.

So, what is the industry missing as part of its move to structured data from the current unstructured data? In the age of machine learning and AI, data must be structured for appropriate risk analysis and processing by machines. The reason why data need to be structured is for machines to be able to identify and process data in the required context; and there is always a business rationale behind the additional granularity provided to the same set of data.

Example of Structuring Name and Address

The first phase of cross-border payments transition to structured data through the use of ISO 20022 messages is focused on identifying parties in a payment chain in an effective and efficient way that results in less risk and faster resolution. Party identification without standard identifiers (name and address of a party) in cross-border payments can be considered as an example. **Figure 1** presents a comparison of how a "Cafe Cuba" and an address in Kyoto, Japan appear in an unstructured data representation (left-side panel) versus a structured data representation using XML tags (right-side panel).

Figure 1: Comparison of Unstructured and Structured Data in Customer Name and Address



ISO = International Organization for Standardization, LEI = legal entity identifier, MT = message type, MX = message type in XML format.
Source: International Financial Standards Advocacy and Promotion Secretariat.

Cross-border payments used to be a business process for a recognized community of service providers such as banks when volume was limited and parties to a payment were limited. In a human-led processing environment between a stable client and provider, it was allowable to have the name and address of a party appear in the same field (as in the left-side panel above) as long as the next service provider in the chain knew how to separate the name from the address and carry out required processes such as screening against a list of sanctioned entities.

As more parties started to become involved, the ambiguity between name and address could be exploited—for example, when several parts of an address looked like individual names or when corporate names attempted to masquerade as part of an address. As this practice was proven to be error prone and high risk, the natural evolution among service providers was to agree that separating the name from the address made more sense. As shown in the right-side panel of Figure 1, the first step to structured data was to separate the name field from the postal address field.

The second step was to examine further structuring of the address field. As markets evolve, the emergence of new sanctions regimes always impacts the handling of data. The introduction of a "town" name in the list of sanctioned entities led the industry to prioritize the identification of a town among more than 20 ISO data elements in an "address." As in the right-side panel of Figure 1, the postal address has places for town name (<TwnNm>) and country code (<Ctry>) separately. The way to handle these differences and changes to a high-risk, high-volume, high-speed environment in today's payments business environment is to automate. The underlying data must be structured correctly in order to automate effectively and efficiently.

ISO 20022 is the standard "method" that derives this data structure from a business process and converts it into the form of a financial message or an application programming interface (API) resource that can be transported across a network. ISO 20022 is not the lengthy format itself but rather the modeling and translation methodologies that convert a conceptual business model into a logical data model and, subsequently, physical message or API resource.

An initial reaction of "it's just a format change" has consequences by delaying the realization and preparation for the change to structured data from unstructured data. A machine will not identify a "sanctioned entity" if the data are not properly structured; anything unstructured will be treated as noise and therefore absorbed.

Proposed Remedy

Orchestrate strategic actions for communicating the value of the change and the purpose of transition

The first remedial action is to develop business narratives linking ISO 20022–based data structure adoption to measurable financial benefits. Known benefits already observed include certainty of party identification and improved sanctions compliance, which would accrue when reduced costs or enhanced safety are properly measured; demonstrating the value of fully leveraged structured data fields, however, must wait until full adoption by the end client.

The second action is to facilitate cross-functional reconciliation of terms between IT teams, compliance officers, and legal teams to ensure terminology alignment. The work would have to be multidisciplined across heritage payment service providers and digital asset providers, further extending to new technology ventures as long as they serve the same client base and address the same risk disciplines.

Finally, knowledge must be shared among stakeholders as well as between financial market infrastructures (FMIs) and participants by introducing adoption case studies that demonstrate successful transitions from unstructured data practices to structured data practices, thereby reinforcing business justifications.

2. Lack of Common Measurement and Implementation Frameworks or Guidance

The need to define measurable standards and aim for responsible implementation with discipline

Many financial institutions view ISO 20022 compliance as a technical mapping exercise, delegating the necessary changes to IT teams without fully aligning to its broader operational impact. This undermines structured data benefits, leading to a downgrade of expected automation improvements and reducing interoperability across correspondent banking networks.

In general, implementation of a new standard is typically considered to be a downstream execution task. It is something that the practitioners are told to "deal with." This attitude often disenfranchises practitioners, especially when there is no common implementation guidance that helps to control the risk and cost of implementation. If the benefits of a new technology are better communicated through measurable or quantifiable means, the cost of implementation can be better managed by communicating the process, framework, and common measures to be applied for implementation.

Standards, especially those recognized globally, should be accompanied by means to measure better practices in a common way. By having common measures, one can benchmark against existing business processes, measure the current costs, and plan for the future. This area should be considered a typical noncompetitive area.

Without globally recognized benchmarks, technology implementation becomes fragmented, making ISO 20022 migration a series of isolated format conversions rather than an end-to-end process automation effort. ISO 20022–based financial message implementation at banks requires time to properly adopt and further capitalize. It begs the question of whether there are common quality and cost measures for existing business processes and whether there are industry-agreed common guidelines for implementation of the ISO 20022 financial messages, or if the new message formats are instead simply thrown to the IT department, which in turn sends it to the "format guys" and tells them to "map it" if not "deal with it."

IT teams do not care about how individual pieces of data should behave as long as the system does not hang (i.e., the message is validated) as it goes through the network. In the end, a standard that was intended for better machine-readable automated processing becomes downgraded to a bilateral mapping exercise across two tables where the result would not map because the legacy data table is unstructured and the new data table is structured.

Proposed Remedy

Develop an elaborate program that industry can commit to, arriving at a standardized implementation discipline

The most challenging step will be to establish industry-wide measurement frameworks to ensure structured data adoption moves beyond superficial format conversions. The initial set of questions requiring answers could involve measuring what is not yet being measured, such as uncovering the cost or risk of continued use of unstructured data in the current environment within the context of identifying parties across a payment chain with multiple intermediaries involved. This is a good area for academic research involving both data and project management.

The next action would be to develop implementation guidelines that emphasize practical automation benefits instead of IT-driven mapping approaches as a useful remedy. This can be put into immediate action by industry bodies close to the ISO 20022 standard itself and those bodies orchestrating ISO 20022 implementation and adoption (e.g., the ISO 20022 Registration and Management Group).

As a term, "ISO 20022" has come to be understood as a new way of financial communication using better structured data formats. However, the ISO 20022 standard itself only shows how a business process can be converted to a data model and subsequently converted into a financial message that can then be passed on through a financial network for other participants to receive and process. The ISO 20022 standard could be accompanied by implementation directions, often as a collection of good practice guidance to show how the standard can be used to best derive a financial message. However, the ISO 20022 standard does not come with such implementation guidance today, which creates a good opportunity to address.

Once there is clarity on how best to deliver financial messages, firms being asked to change their underlying business processes to adapt to the new financial message can start to think about how best to implement such changes in their systems. That would then lead to the industry being able to develop market-wide frameworks with appropriate incentives and sanctions.

Finally, regulatory incentives should be developed for firms implementing structured data properly to improve operational efficiencies and incentives to share good practice in newly defined noncompetitive areas. For example, the Basel Committee on Banking Supervision's Standard No. 239 is a risk reporting standard that serves as a guide on how to aggregate risk data to improve internal reporting practices.[3] It consists of 14 beneficial principles with guidance on their implementation and recommendations on the use of technology for consistent data quality and regulatory compliance.

3. Misalignment between Technology Investment and Financial Strategy

The need to craft a transition strategy that balances cost, time, and impact

At an individual firm level, typical resistance to change materializes by weighing the benefit against the investment required and the cost to retire existing services while maintaining the new service. Why change when the existing method is working? On top of this entrenched view, a common misunderstanding, typically in the public sector and academia, is that investment is a one-time expense. The reality, however, is that unless one has an accelerated depreciation or tax exemption agreement with the tax authority in one's country, technology investments, inclusive of all the associated human costs, are not accounted as an expense but recorded as an asset, which requires multiple years of amortization (i.e., depreciation of an asset) that eats into the profit and loss for several years after the investment is made.

The CFO's view is that a firm will be taxed for a long time once it makes an investment in technology assets. Financial discipline would not authorize an investment unless there is revenue that at least covers the cost of amortization for each year following the investment. A tightly managed firm would only authorize investments that have sufficient billable end-client demand for the service that leverages the proposed new technology.

The other often overseen factor is that time always works against the business providing the service leveraging new technology to earn revenue from its clients. This is because once a project is tagged as an investment, the personnel attached to that project will become part of the investment and are therefore added to the cost of amortization. More costs will accumulate if the revenue-generating component is not released on time. A firm frequently experiences profit dilution when adoption costs extend beyond expected timelines, causing firms to abandon or delay technology implementation efforts. Additionally, resource allocation mismanagement leads to unnecessary personnel overhead costs, further exacerbating financial constraints. This view may not be easily understood by IT teams as they are generally tasked to deliver something on time and nothing more.

At the industry level, firms are collectively spending too much time and effort dealing with the same transition efforts individually when certain aspects could be mutualized by sharing resources. The transition efforts should first be divided into noncompetitive domains and competitive domains. The competitive domains are client-facing parts that result in service differentiation, and the noncompetitive parts would be the remainder, including the implementation of a change in standards and market practice that apply to all participants in the market. The establishment of an interim body between industry and the regulator could absorb the noncompetitive burdens and help mutualize the cost of transition by providing advocacy and training on behalf of industry to tackle the initial learning curve.

Proposed Remedy

Structure a transition strategy that supports business viability

Remedies can be easily introduced at the individual firm level. The first step is simple, probably implicit to the business, and already practiced through the financial control functions on behalf of the CFO. This is to align technology investment models with multiyear depreciation schedules at each project implementation level to secure transparent CFO approval.

Management accounting boundaries may have to be revisited depending on the current gaps between financial and management accounting as well as the boundaries between projects, programs, and the business. Concurrent project and business planning must be put in place to ensure technology implementation phases coincide with revenue-generating opportunities to mitigate amortization burdens. In addition, internal resource allocation must be optimized to prevent unnecessary cost escalation during transition periods.

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[3] Basel Committee on Banking Supervision (BCBS). 2013. BCBS Standard No. 239: Principles for Effective Risk Data Aggregation and Risk Reporting. https://www.bis.org/publ/bcbs239.pdf.

Typical project planning extends the project term by factoring in the risk of uncertainty, but it is necessary to examine the risk factors and be prepared when risks materialize. This will likely be practiced in most firms to the extent possible, and improvements should enhance the clarity of the transition.

4. Prematurely Proposed Regulatory Mandates without Market Readiness and Underlying Practices

The need to establish foundational practice before setting legal and regulatory boundaries

Introducing regulations before widespread industry adoption of a practice risks failure. Conformance to financial technology standards and compliance with regulatory standards must reflect practitioner realities, thus ensuring firms recognize the real operational benefits before policies become enforceable.

In this sense, bank-based cross-border payments, often involving a lengthy chain of banks in different markets possibly representing distinct practices, are a challenge, especially when compared to securities or derivatives. Securities and derivatives tend to have globally accepted risk principles that are ultimately embedded into client master agreements, while cross-border payments are largely a bilateral client-to-vendor relationship (unless all providers operate under an agreed scheme). For example, securities settlement takes place after both parties to a delivery of securities (e.g., a bond) agree prior to settlement that one side delivers a certain amount, and the other side confirms that it is expecting to receive the same set of securities or the settlement payment amount if it is a versus-payment transaction. This is a good practice known as pre-settlement matching, which is used to avoid failure of a settlement.

For payments, it is only recently that pre-validation of a beneficiary account has been recognized as a good practice that enables real-time payments. Economies in Asia and the Pacific recognize this as good practice since real-time payment schemes are starting to connect across borders. In the European Union, it has become a state of practice that can be regulated as a verification-of-payee rule. Previously, cross-border payments by banks could have been seen as a "fire and forget" exercise, where the sending party sends the instruction to the next party and hopes that it reaches the other end, appearing surprised when an inquiry comes back (typically when a beneficiary account does not exist).

Practice means the existence of a recognized set of processes that serves the need of the end-client and addresses key risks. Divergent practices converge as areas of standardization and are recognized as noncompetitive areas providing common value for the industry, while competitive areas are understood as the primary arena where industry competes, and divergence is considered the competitive edge. Standards cannot exist without underlying practices that reflect an accumulation of the history of better risk management and services. Standards without underlying practice are an empty pledge that is not followed by action as they do not have the audience of practitioners the standards are meant to serve.

It is fair to say that the implementation of cross-border payments may need some time to expose areas that require better practices to emerge and converge before standards and proper regulations can be introduced. It is difficult to enforce a rule when the practitioner does not recognize the current shortcomings.

Work is already in progress: The Committee on Payments and Market Infrastructures announced data requirements for enhancing cross-border payments, recognizing the role of the business identifier code (ISO 9362) and the legal entity identifier (ISO 17442) as globally recognized and publicly accessible ISO standard identifiers and acknowledging the need to embark on a consistent adoption journey.[4]

Proposed Remedy

Ensure policy readiness through a market consensus process

Preparation should include (i) establishing common practice that the industry can collectively commit to, and (ii) benchmarking the current status. Then, the first step is to establish a fast-track process that encourages voluntary pilot programs before regulatory enforcement takes effect to allow adoption maturity over a set period of time.

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[4] The Committee on Payments and Market Infrastructures is an international standard-setting body that promotes, monitors, and makes recommendations about the safety and efficiency of payment, clearing, settlement, and related arrangements. For details, see https://www.bis.org/cpmi/about/overview.htm; Bank for International Settlements. 2023. Harmonized ISO 20022 Data Requirements for Enhancing Cross-Border Payments—Final Report. CPMI Papers. https://www.bis.org/cpmi/publ/d218.htm. Requirement No. 8 specifies the need to identify all financial institutions involved in cross-border payments in an internationally recognized and standardized way.

The second step is to define phased regulatory timelines to follow the fast-track implementation period, ensuring that regulation does not precede practice, thus enabling firms to transition smoothly.

A final consideration is to promote industry collaboration to ensure banks and service providers can jointly shape risk mitigation and regulatory compliance frameworks. By putting practice first, risk and control points are identified in advance and legal and regulatory frameworks can follow to ensure that all control points are addressed by reflecting market reality.

5. Standards Distribution Leveraging Centralized Governance Detached from Practitioner Realities

The need to ensure that market governance reflects user needs and business conditions

FMIs, including payment clearinghouses, often dictate policies as a central node of technology distribution, failing to incorporate real-world operational realities faced by FMI participants (e.g., clearing members of a payment clearinghouse).

Centralized "command and control" technology distribution works best when the impact of change can be contained within the bilateral relation of a market's infrastructure and its participants. However, what is less known is that the participants' interaction with the market infrastructure is not contained with the data exchange that takes place across the two entities.

Taking payments as an example, the most historical form of payment market infrastructure could be a check clearinghouse, originating as market practitioners agreed to a common set of rules and processes and then created an entity that could provide a common utility service for the benefit of the market. Over time, the clearinghouse started to see itself as a central point of influence, while clearinghouse participants saw their business evolve with end-client behaviors, or background regulatory developments, that were not synchronized directly with the clearinghouse.

As more time passes, the clearinghouse loses sight of how data are passed on through exchange with the participant and what impact it may have on the end-client (i.e., the client of the clearinghouse participant).

The difficulty of orchestrating change becomes evident, as FMIs and clearinghouses must ensure that all participants are kept in the loop (as representatives of the end-client) so that changes in market practice are understood and a positive feedback loop is created end-to-end.

Proposed Remedy

Take bold steps to rebuild governance frameworks that incorporate practitioner feedback

The first step is to study and advocate for user-driven governance models ensuring active practitioner participation in policy making. This, in turn, means that practitioners must embrace full accountability to the scheme that is put in place.

Market governance becomes effective by concurrently introducing continuous feedback loops between clearinghouse participants and practitioners that participate in the clearinghouses to maintain relevance in governance decisions.

Implementation could be challenging when a significant portion of payments market infrastructure is owned and operated by central banks with public policy mandates to serve, rather than being user-driven. A consideration here is to implement periodic governance reviews allowing participating firms to refine implementation dynamically.

An ISO 20022 Ecosystem for Cross-Business Domain Interoperability and Consistent Data Quality

The world is moving toward more machine readability and AI for the sake of efficiency, safety, and the robustness of cross-border payments. As such, one should take the need for structured data as a given. As the world becomes more integrated and devices become more connected with one another, "more volume" should be taken as another given. Less risk is always good if it is balanced by the cost of execution including the time spent. Faster certainty means less risk, and there is no denying that there is another driving force toward "everything in real time."

There are now more than 750 ISO 20022 messages available across business domains, not just payments.[5]

[5] ISO 20022. Financial Repository. https://www.iso20022.org/financial-repository; ISO 20022. Process Catalogue. https://www.iso20022.org/iso-20022-message-definition.

The current business domains at work for ISO 20022 are broadly defined as Payments, Securities, Cards, and Related Retail Financial Services; Foreign Exchange; and Trade Finance. The ISO 20022 standard has various implementation aspects in play across these business domains. For payments, the United States' Fedwire completed its transition to ISO 20022 messaging in July 2025.[6]

Intensive work is also progressing through coordination of FMIs and industry groups to align cross-border messaging (e.g., Swift CBPR+ messages) and domestic FMI messaging, which is coordinated via the High Value Payments Systems Plus group (commonly known as HVPS+), with more to come as adoption accelerates.[7] All other business domains have their own implementation aspects, which indicates that there is an ecosystem that is emerging and encompassing all business domains by using ISO 20022 as both a method and a tool to manage interoperability.

Beyond current implementation, the ISO 20022 standard itself is being revised toward the end of 2025.[8] The current ISO 20022 standard works well in one direction producing XML messages out of an underlying business process, but it is not easy to achieve interoperability with other financial messaging standards and protocols.[9] A revision is in progress to make the ISO 20022 standard syntax agnostic, moving away from a single model of XML message generation and providing clarity on how an API resource could be generated using the ISO 20022 method.

These trends imply that ISO 20022 implementation can also move away from a linear distribution using FMIs as key nodes, with a federated implementation model eventually emerging. Governance beyond FMI-led standards distribution will be required to ensure interoperability across known business domains when the time comes for cross-domain consistency and data quality.

The Role of the Implementation Bodies of ISO 20022 in the ISO 20022 Ecosystem

Addressing the market structure and governance gap in one business domain from a market infrastructure perspective may not solve the root problem, which goes back to the first inhibitor of transition to a new technology: a lack of purpose. The illustration in **Figure 2** presents the sequencing of ISO 20022 implementation as one example. This diagram is often used to explain how market structure works as a technology distribution channel.

Starting from the top of Figure 2, the ISO 20022 standard methodology is managed and overseen by the ISO Technical Committee 68 Sub-Committee 9 (ISO/TC68/SC9). Implementation of the standard starts at the second level from the top where ISO 20022 messages and API resources are developed and registered at the ISO 20022 repository for reuse.

Providing clarity of purpose must entail a coordinated effort starting from the ISO 20022 standard itself, its implementation bodies such as the ISO Registration Authority, the Registration Management Group, and the Standards Evaluation Groups, as well as market practice bodies such as the Securities Market Practice Group and the Payments Market Practice Group, among many others that provide market practice guidance when there is a need to introduce new financial messages or changes to existing practices based on current financial messages.[10]

In the case of ISO 20022, registration is carried out by an ISO Registration Authority, which has a contractual relation with ISO and works together with the user or prospective user of ISO 20022.[11] Registration artefacts often called the "base messages" are made available to

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[6] FRB Services. Fedwire Funds Service ISO 20022 Implementation Center. https://www.frbservices.org/resources/financial-services/wires/iso-20022-implementation-center.

[7] Swift. Standards—Market Practice—High Value Payments Systems Plus. https://www.swift.com/standards/market-practice/high-value-payments-systems-plus.

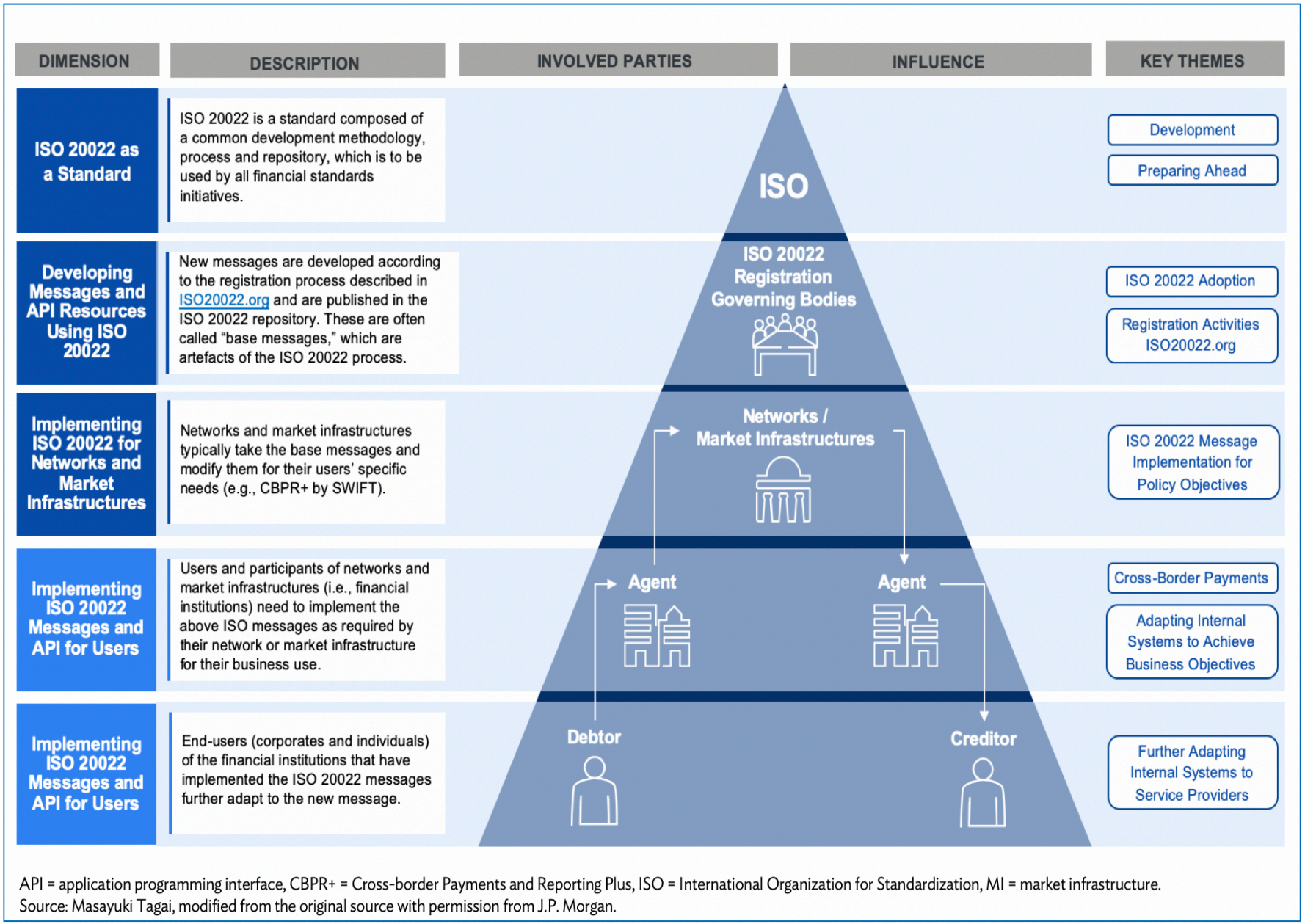
[8] The ISO 20022 standard can be purchased through national standards bodies in each market.

[9] The current ISO 20022 standard defines how XML messages are generated in Part 4 and ASN.1 messages in Part 8. However, there are no known implementation cases in the public domain for ASN.1 and, therefore, ISO 20022 messages have become synonymous with XML messages.

[10] Securities Market Practice Group. Home. https://www.smpg.info/; Swift. Standards—Market Practices—Payments Market Practice Group. https://www.swift.com/standards/market-practice/payments-market-practice-group.

[11] ISO 20022. Registration Authority. https://www.iso20022.org/registration-authority.

Figure 2: Market Structure as Technology Standard Distribution Channel



API = application programming interface, CBPR+ = Cross-border Payments and Reporting Plus, ISO = International Organization for Standardization, MI = market infrastructure.
Source: Masayuki Tagai, modified from the original source with permission from J.P. Morgan.

the public.[12] The Registration Authority is assisted by the Registration Management Group, which represents all users of the ISO 20022 standard by setting up the governance required for a user-led ISO 20022 registration process.[13]

Then comes the market infrastructures and network service providers, as shown in the third level of Figure 2. These entities take the published messages and apply their own technology constraints for network validation and/or set textual rules that address their own market nuances, as well as enhance features that are in line with market practice. A certain level of convergence is achieved, and excess divergence can be avoided if FMIs have their own coordinating industry bodies, such as HVPS+, and possibly many others as applicable in each business domain.

The earlier mentioned Securities Market Practice Group and the Payments Market Practice Group can be seen as industry groups providing market practice guidance as participants of those networks and market infrastructures, as shown in the fourth level in Figure 2.

The bottom level shows the end clients that need to comply with the new format. The purpose for the change must be understood consistently across this distribution channel.

Conclusion and Recommended Next Steps

Cross-border payments, particularly in the context of ISO 20022 adoption, remain in an under-governed state where market practices are still evolving and the necessary actors are not in place. The transition from unstructured data practices (that worked for decades) to structured data is not a one-off process that has taken several years of preparation and will end in November 2025 (for the Swift MT standard users). It is a process that requires continuous improvement and phased implementation to achieve its full benefits. While public policy objectives call for enhanced data quality, payment safety, and resilience, premature enforcement without structured implementation planning risks failure.

The transition to structured data also requires an understanding that there is no going back. Once data are well defined and well structured, the machines will be able to identify and process data as intended. Machine-readable and machine-processable translates to consistent compliance end-to-end.

The five inhibitors and accompanying possible remedies outlined in this brief serve as beacons for structuring adoption strategies, reducing friction in transition, and ensuring success in implementing next-generation financial messaging standards. Addressing these considerations will allow firms to navigate investment challenges, align compliance with real-world practices, and ensure governance structures remain dynamic and responsive.

Given the fragmentation in the payments industry, there is a need for an implementation-focused orchestration effort—an interim body bridging technology and business, the public and private sectors, and standards development with market practices. A designated FMI could take such a role in markets where service providers are concentrated in a particular industry sector and participate as an FMI member.

More diverse markets should consider carving out cross-border payment service providers as a licensing regime and establishing coordinated self-governance by designating a supervisory authority like a self-regulatory organization seen in securities dealerships. Such a structure would provide oversight, ensuring practical adoption strategies are aligned with end-user needs. It would also create capacity for foresight as market conditions evolve.

After all, a successful market transition cannot rely solely on technical frameworks or high-level policies. It requires careful implementation design built upon practitioner insights and operational realities with aspirations to adapt to changing market conditions.

[12] Information related to the ISO 20022 implementation through registration is available at https://www.iso20022.org.
[13] ISO 20022. Registration Management Group. https://www.iso20022.org/registration-management-group.

About the Asian Development Bank

ADB is a leading multilateral development bank supporting inclusive, resilient, and sustainable growth across Asia and the Pacific. Working with its members and partners to solve complex challenges together, ADB harnesses innovative financial tools and strategic partnerships to transform lives, build quality infrastructure, and safeguard our planet. Founded in 1966, ADB is owned by 69 members—50 from the region.

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