Drive Payment Transformation with ISO 20022

Accelerate the adoption of data-rich payment standards, enhance transaction efficiency, and achieve global interoperability for a seamless financial future.

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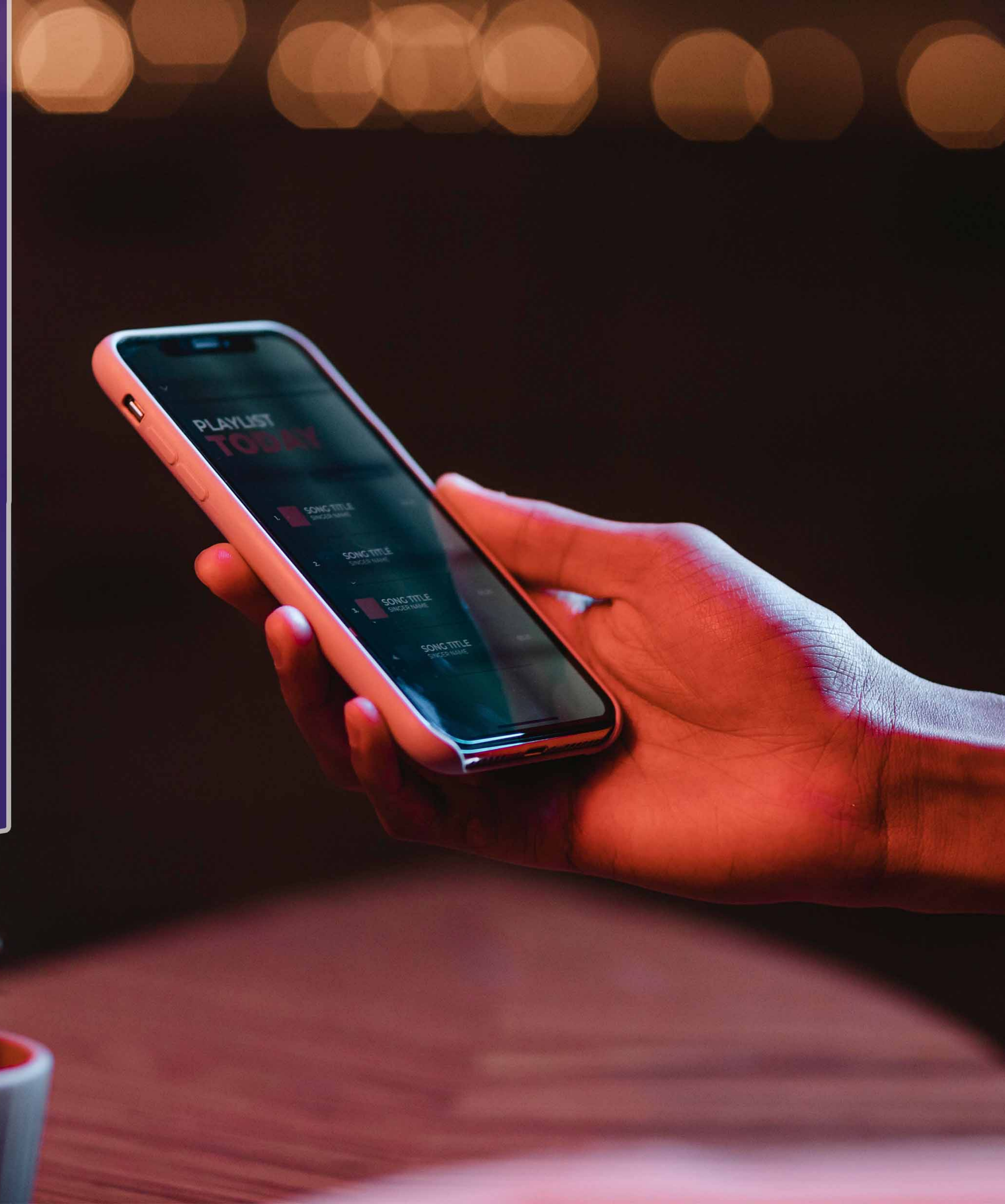
Why Was There a Need for a New Global Standard?

As the global economy grew more interconnected, the variety of data formats used to transmit information between systems and countries increased. There was no universal "language" for exchanging payment instructions between local and international financial institutions. This lack of standardization heightened the risk of misinterpreting instructions, leading to friction and increased costs for all parties involved.

Global standards are crucial to ensuring smooth communication among all participants. For instance, in telecommunications, standards allow us to communicate seamlessly with people using different handsets or networks. Similarly, in IT, standards enable various devices to operate across different platforms and protect consumers by ensuring consistent repair and production practices.



Introduction of Swift

The Society for Worldwide Interbank Financial Telecommunications (SWIFT) has been operating a trusted closed message type (MT) computer network for communication between member banks worldwide since the 1970s. Based in Belgium, SWIFT is overseen by the National Bank of Belgium (NBB) and a committee with representatives from the US Federal Reserve, the Bank of England (BoE), the European Central Bank (ECB), the Bank of Japan (BoJ), and other major banks.

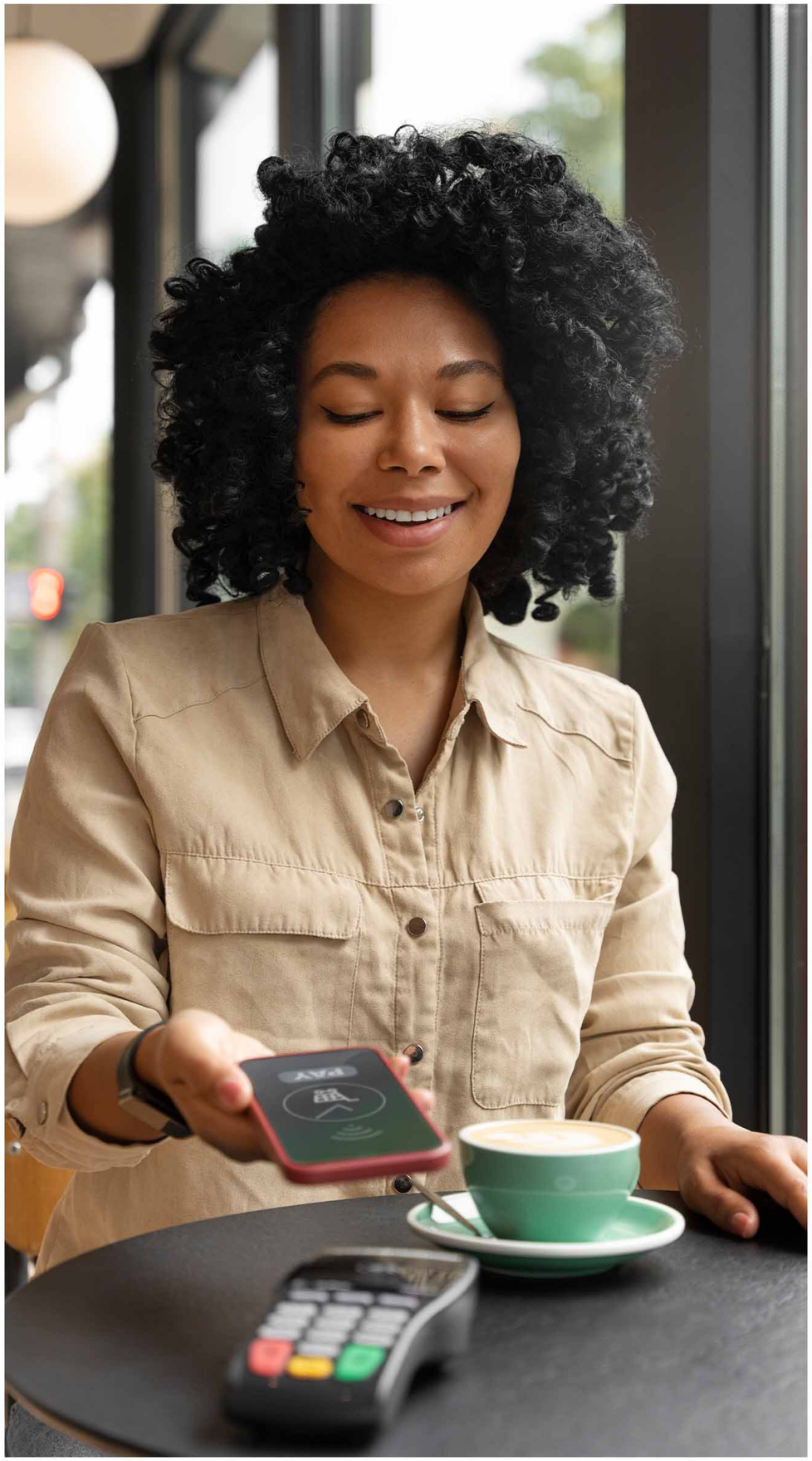
The SWIFT platform boasts around 11,000 users and processes about 45 million communications daily, most of which are money transfer transactions. Financial institutions (FIs) and brokerage houses using SWIFT have unique codes that identify each institution and credentials that authenticate and verify transactions, ensuring secure and reliable communications.

In many parts of the world, including the Middle East and large areas of Africa, SWIFT MT messages form the foundation for national and regional payment infrastructures. Some notable examples include:

Saudi Arabian Riyal Interbank Express (SARIE) System: Established in 1997, this real-time gross settlement (RTGS) system for Saudi Arabian riyals is largely based on SWIFT MT standards.

Gulf Cooperation Council (GCC) Regional RTGS System: This system, based on SWIFT standards, connects the domestic RTGS payment systems of GCC member countries. It aims to facilitate faster and more cost-efficient transactions by eliminating the need for correspondent banks.

Regulators worldwide also rely on SWIFT messages to maintain the integrity of the global financial system. They use these messages to monitor, prevent, and track the financing of criminal or terrorist activities. For instance, the Terrorist Finance Tracking Program (TFTP) enables the US Treasury and its allies to identify and locate operatives and their financiers, map out terrorist networks, and prevent money from reaching these groups.



Why Banks need ISO 20022

1. **Enhanced Data Quality:** ISO 20022 provides a framework for financial messages that is rich in structure and detail, allowing for more granular data in every transaction. This leads to better data quality, which is crucial for accurate processing and analysis.

2. **Streamlined Compliance:** The standard helps streamline financial crime compliance by reducing false positives in sanctions screening, potentially by as much as 25-30%2. This is due to the clear identification and descriptions of information in each message.

3. **Operational Efficiency:** By adopting ISO 20022, banks can reduce operational costs, improve data accuracy, and increase the speed at which transactions are settled. This efficiency is key in today's fast-paced financial environment.

4. **Customer Insights:** Banks gain the ability to quickly analyze customer data, enabling them to tailor experiences for each customer or segment. This can lead to improved customer service and new value-added services.

5. **Global Reach:** ISO 20022 is an international standard that facilitates global interoperability and instant, frictionless cross-border transactions. This is essential for banks operating in the global marketplace.

Financial Services covered by ISO 20022

ISO 20022 indeed covers a broad spectrum of financial services, encompassing:

1. **Electronic Payments:** This includes credit and debit card transactions, as well as direct debits, ensuring standardized messaging and processes across payment systems.
2. **Securities:** ISO 20022 facilitates messaging and data exchange for securities trading, settlements, and related activities, enhancing efficiency and interoperability.
3. **Cash Management:** The standard supports cash management functions such as reporting, forecasting, and liquidity management, streamlining financial operations.
4. **Trade Finance:** ISO 20022 enables standardized messaging in trade finance activities, improving communication and reducing discrepancies in trade transactions.
5. **Foreign Exchange:** It covers messaging protocols and data formats for foreign exchange transactions, enhancing transparency and efficiency in FX operations.
6. **Treasury Management:** ISO 20022 supports messaging related to treasury management functions, including risk management, investment activities, and financial reporting.

MT To MX Migration Journey

Payment Infrastructures Migration Journey

The ISO 20022 migration journey is progressing. By 2025, all financial institutions will have to be able to process ISO compliant payment transactions.

By 2023, ISO 20022 will account for

- 80%-Volumes of high-value transactions
- 87%-Values of high-value transactions

Countries and regions worldwide are migrating at a different pace. For many banks, the migration will happen in various stages during period of up to 5 years

Several low value and instant payment schemes have already migrated to ISO 20022

Nov 2022

SWIFT

SWIFT

All financial institutions processing SWIFT MT category 1,2 & 9 must process 150 20022 by November 2022

Nov 2022

target services
target2
EBA CLEARING

EURO

Big Bang: all EURO payments going through TARGET2 will only be in 150 20022 format from November 2022

Jun 2022

CHAPS
bacs
Faster Payments

Bank of England (Chaps)

CHAPS on a like-for-like basis in Spring 2022 and for fully enhanced messages in early 2023

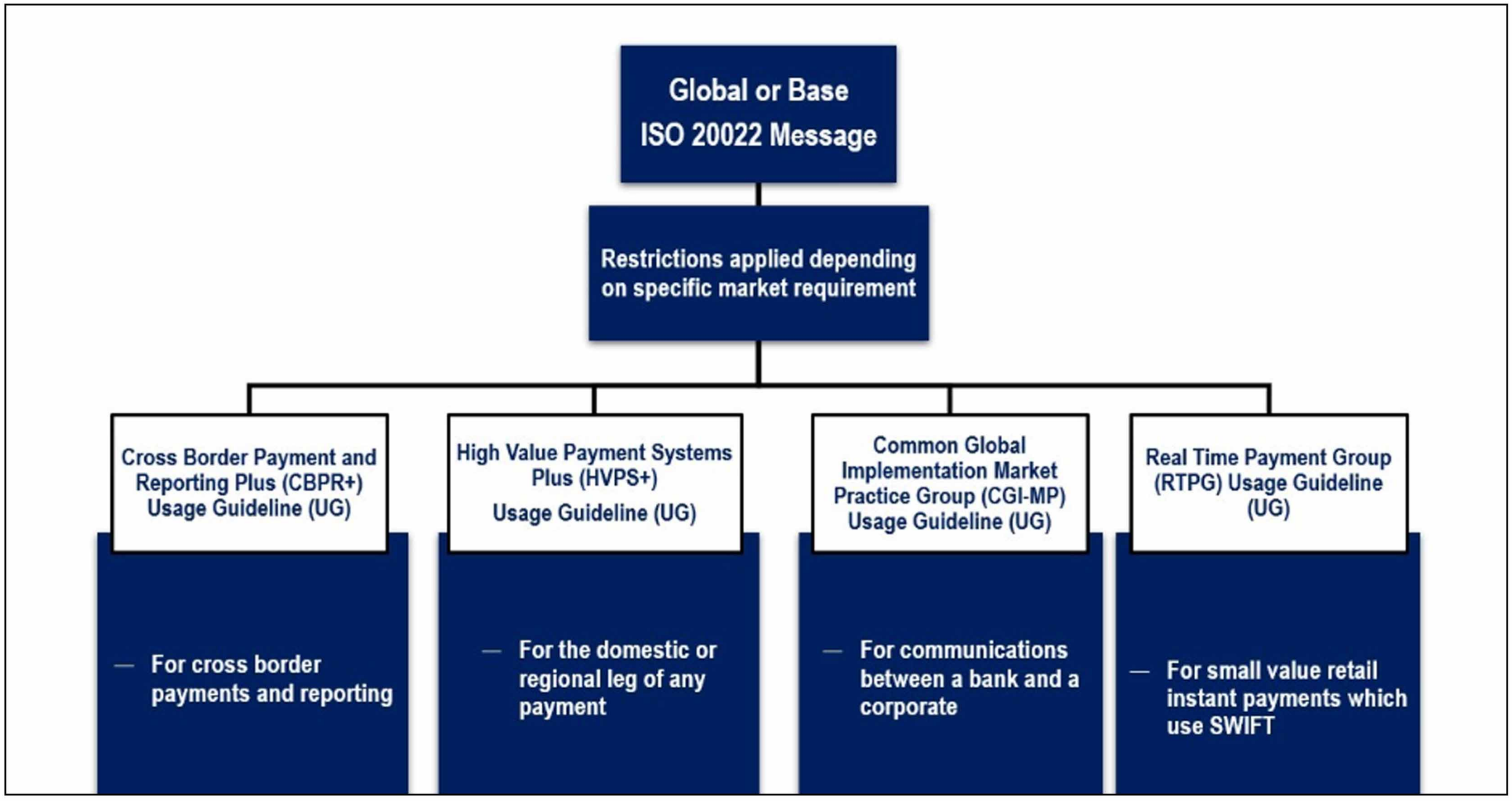
2024

Fedwire
The Clearing House

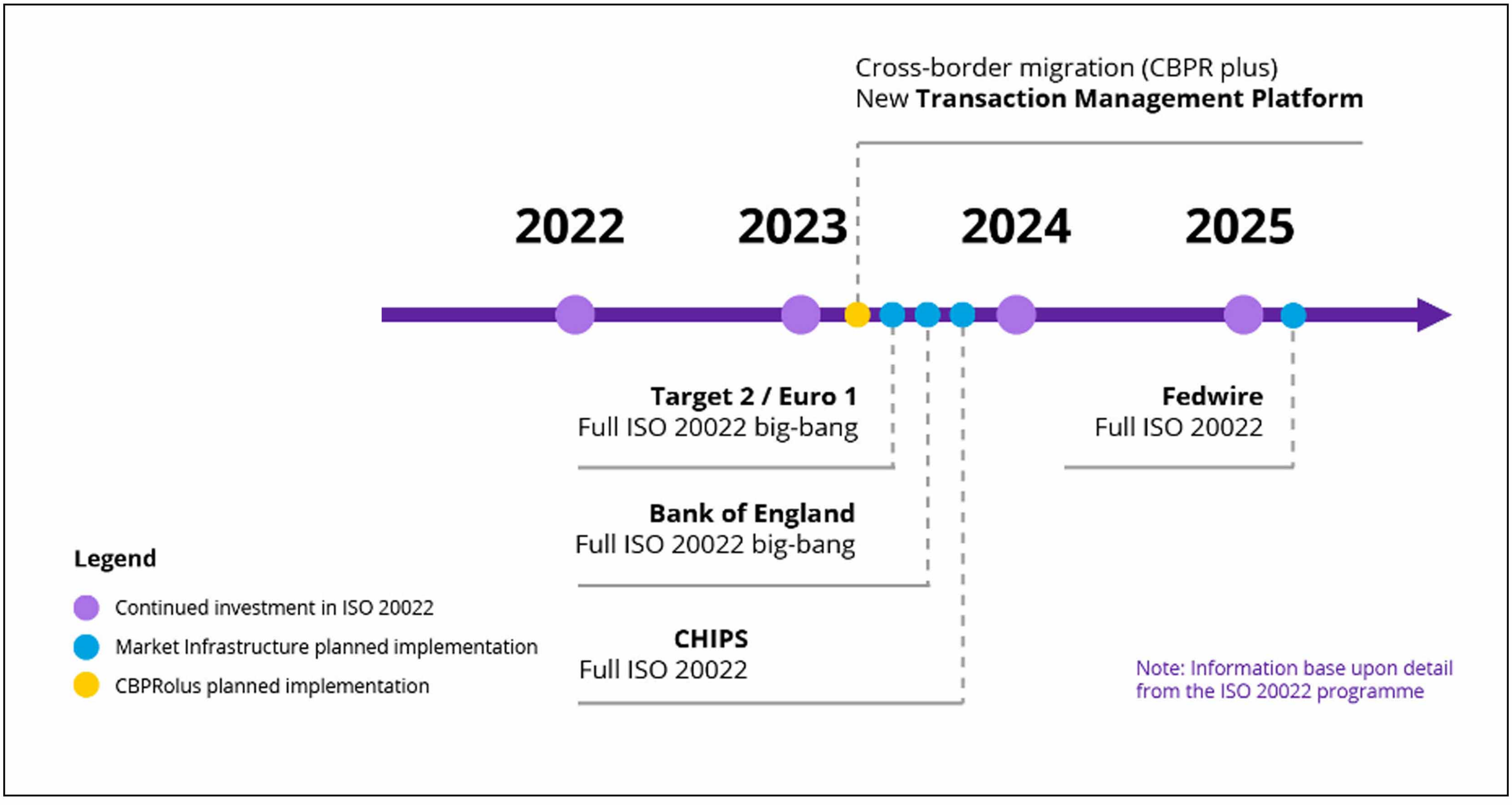
US (Chips & Fed)

Planned enhanced ISO 20022 messages through a "big bang" rather than via a phased approach but currently redefining the strategy

Usage Guideline



Overview of ISO 20022 Timeline



The Limitations of Traditional MT Messages

Traditional MT messages have become outdated, struggling to keep up with modern digital payment flows and enhanced financial crime controls required by regulators. Here are some of the key limitations:

1. **Opportunities for Fraud:** The limitations of MT messages create vulnerabilities for fraud. In 2016, cybercriminals exploited these weaknesses to defraud the Central Bank of Bangladesh of $80 million using fraudulent SWIFT transfers to various banks, including the Federal Reserve Bank of New York, Rizal Bank in the Philippines, and banks in Sri Lanka and Vietnam. The theft could have been even larger if not for a typo in one of the money transfer requests that caught the New York Fed's attention.

2. **Fire-and-Forget Messages:** SWIFT MT messages were designed for an era of primitive computer networks, which makes traceability challenging. For example, MT103 and MT202 messages represent only one transaction per message, making it difficult to distinguish between the original and returned payment flows, especially when additional charges are involved.

3. **Unstructured Data and Free-Form Messages:** According to research by SWIFT, 72% to 94% of party data fields in SWIFT MT cross-border payment messages use free-form and unstructured data, often with limited or unclear information (such as country codes). This lack of structure leads to approximately 10% of payments requiring manual interpretation and costly screening.

4. **Customized and Extended Messages:** Over the years, market participants have extended MT messages in various ways. For example, payment returns use two adapted messages—MT103 RETN for returning customer transfers and MT202 RETN for returning FI transfers. These messages are not officially defined in the MT standard but are modified versions of the original MT transfer messages (103 and 202), with added return information in the free text field 72.

Moving to the new ISO 20022 standard

Since the advent of SWIFT MT messages, various domestic and cross-border payment protocols have emerged. China and Russia developed their Cross-Border Interbank Payment System (CIPS) and Financial Messaging System of the Bank of Russia (SPFS) networks, respectively. The Association of Southeast Asian Nations (ASEAN) countries are linking their domestic real-time and QR-code-based payment systems for instant cross-border transactions. In India, NPCI and TerraPay enabled cross-border payments on the unified payments interface (UPI) platform, and several banks have adopted distributed ledger technology from Ripple for cross-border payments.

The Evolution of Payment Standards

In response to the evolving payment landscape, SWIFT defined the ISO 20022 standard in 2004. This standard aims to improve payment processing efficiency and interoperability with emerging payment mechanisms by replacing proprietary message formats with a standardized format and data element definition.

Key Features of ISO 20022

Modeling Methodology:

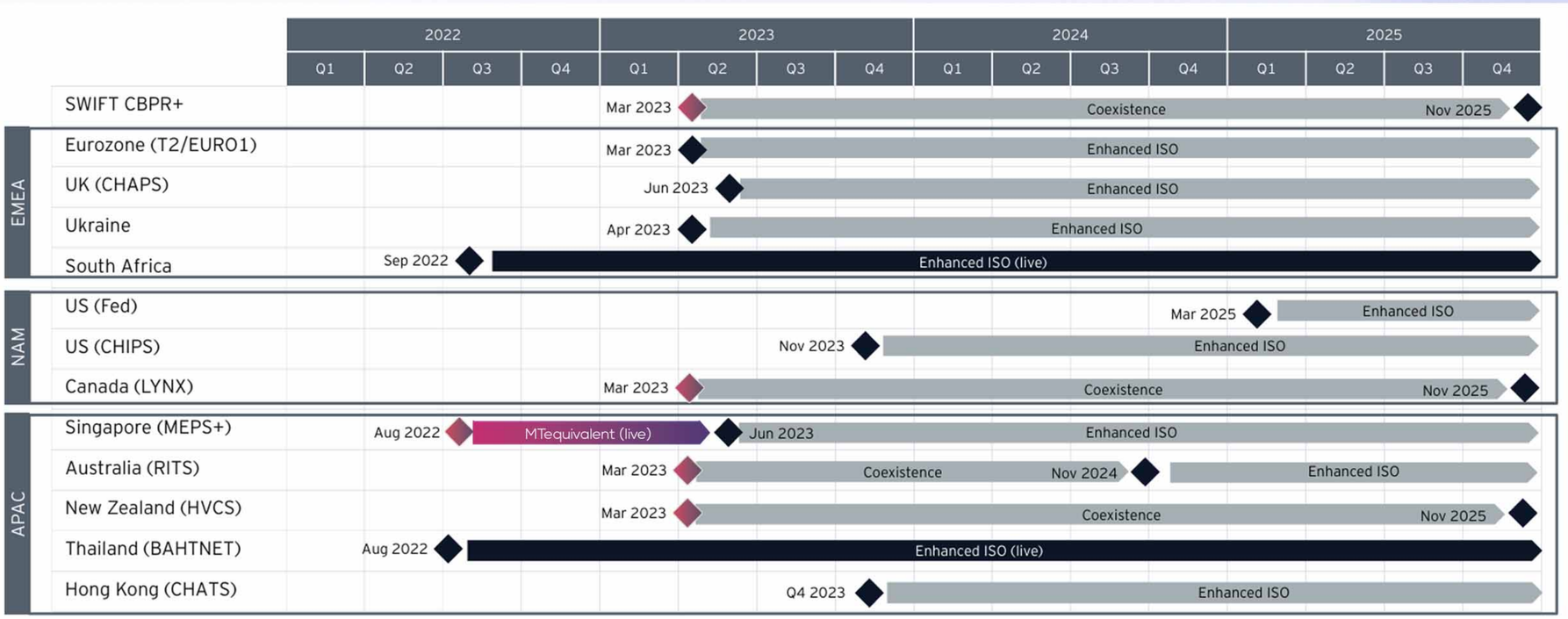
ISO 20022 captures financial business areas, transactions, and associated message flows in a syntax-independent manner. This allows for clear and consistent communication across various systems and platforms.

Central Dictionary:

A central dictionary of business items used in financial communications ensures uniformity and clarity, reducing the need for manual interpretation and the risk of errors.

Extensible Markup Language (XML) and ASN.1 Design Rules:

ISO 20022 includes XML and ASN.1 design rules that convert message models into XML or ASN.1 schemas. This flexibility allows banks to adopt the preferred syntax for their systems and ensures compatibility with different technologies.



Key Benefits of ISO 20022

ISO 20022 became a mandatory standard in 2019, with the initial cutover from MT messages required by March 2023, and a transition to native ISO 20022 messaging to be completed by the end of 2025. This transition promises several operational benefits for financial institutions:

Consistency
ISO 20022 provides a formal model to capture and structure a multitude of payment information. This standardization ensures that financial messages are clear, precise, and consistent across different systems and institutions.

Security
With ISO 20022, richer message data is included in transactions, such as the purpose of payment, source, and beneficiary details. This additional information improves the detection of suspicious activity, reduces the chance of misinterpretation, and minimizes risks and costs. For example, the Single Euro Payments Area (SEPA) reported annual savings of US$23.7 billion from ISO 20022 transactions.

Enhanced Visibility
ISO 20022 enhances visibility over cash positions and provides a near real-time view of liquidity. This transparency is crucial for effective cash management and helps financial institutions make informed decisions.

Efficiency
The efficiency and speed of payment processing are significantly improved with ISO 20022. Initial estimates by EY suggest that false positive rates for suspicious transactions could be reduced by up to 90%, freeing up 16% of additional capacity. This efficiency translates into faster transaction times and reduced operational costs.

Automation
ISO 20022 supports the maximization of straight-through processing (STP), potentially exceeding the 90% threshold that large banks target for their automated payment programs. This high level of automation reduces manual intervention, minimizes errors, and increases overall processing speed.

Leading Payment Players Gear Up for ISO 20022 Transition

Banks and other payment processors worldwide are progressing well on their ISO 20022 implementation journeys. However, there are several immediate concerns, particularly with legacy payment technology platforms. The following issues and solutions are key as financial institutions transition to ISO 20022:

Key Concerns and Solutions

1

Truncation of Data
Compared to SWIFT MT messages, ISO 20022 messages can contain up to ten times more data. This increased data capacity means that MX fields may not have all equivalent fields when mapping a transaction like-for-like (LFL). To avoid data loss, placeholders can be added to ensure key information is retained during the transition.

2

ISO Addresses
The names and addresses of all parties in the payment chain should be captured in a structured XML format under ISO 20022. This structured data format will significantly enhance automated AML (anti-money laundering) and sanctions screening but will initially require additional operational effort to adapt to the new system.

3

New Data Fields
Currently, SWIFT MT messages do not support fields for the initiating party, ultimate debtor, and ultimate creditor, which are required in ISO 20022. Banks need to ensure they collect this additional information from their customers to comply with the new standard.

4

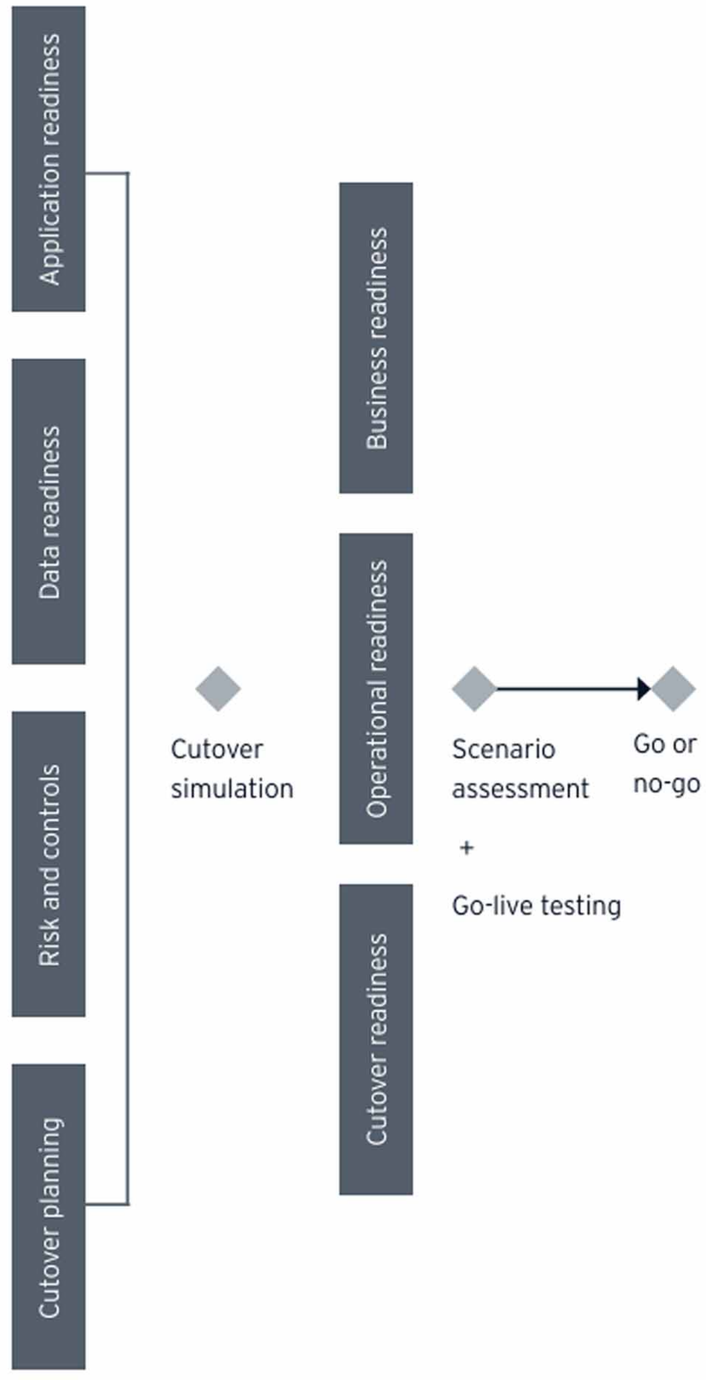
Expanded Remittance Information
ISO 20022 allows for expanded remittance information, structured with tags and fields, unlike the traditional MT format, which is limited to 70 characters. This expanded capability simplifies data processing but will initially require manual intervention to manage the transition.

5

Impact on Peripheral Platforms
Platforms used for accounting, reconciliation, and liquidity management may need retrofitting to support ISO 20022. Over time, blocks of functionality from these legacy systems will need to migrate into newer payment hub platforms to fully leverage the benefits of ISO 20022.

Key Benefits of ISO 20022

		Activities
1 Business readiness	▸ Strategy, approach and governance ▸ User acceptance testing (UAT) test case ▸ Pre-prod test ▸ Communications	**Business impact and contingency planning** ▸ Strategy, approach and governance ▸ Impact on priority businesses: Financial Market Infrastructure (FMI), business units, countries, currencies, Tier 1 or Tier 2 payment flows, foreign exchange (FX) corridors ▸ Go or no-go assessment and scenario planning ▸ Stabilization after go-live, communications and policy frameworks
2 Operational readiness	▸ UAT test case ▸ Policies, procedures and people ▸ Pre-prod test ▸ Communications	**Deployment and contingency planning** ▸ Prepare plan for all communications (external and internal) ▸ Confirm staffing levels are appropriate for the expected volume of work ▸ Approval and sign off from all stakeholders ▸ Operational readiness assessment criteria, process and checklist
3 Technical readiness	▸ Strategy, approach and governance ▸ Internal test case ▸ External test case	**System, infrastructure and resource readiness** ▸ Infrastructure assessment and stress testing ▸ Regression testing – prioritized list of scenarios ▸ Inbound message – processing outbound message and workflow assessment ▸ System recoverability and go-live support ▸ Minimize technical complexity of the solution deployment
4 Risk and controls	▸ Internal test case ▸ External test case ▸ Pre-prod test ▸ Performance test ▸ Disaster recovery (DR) test	**Risk modeling and controls review** ▸ Payment control validations – new controls introduced by ISO 20022 mandates in global, regional and domestic context ▸ Know the organization's capacity to absorb change and mitigation strategies ▸ Update sanctions screening systems and migrate tuning rules from legacy systems and test
5 Cutover readiness	▸ Cutover assessment ▸ Cutover checkpoints ▸ Monitoring and reporting ▸ DR planning and sign-offs	**Cutover assessment, monitoring and readiness** ▸ System readiness and failover scenario sign offs ▸ DR plans and simulations ▸ Trainings, resource allocation and support requirements mapping ▸ Assessment criteria review and sign offs



Modernizing Payment Models for ISO 20022 Compliance

Techzert Specialization in Both Approaches

Structuring your overall program for transitioning to ISO 20022 involves careful planning and consideration of various factors. Here are two approaches you can consider:

Big Bang Approach

Sponsorship and Accountability: This approach is sponsored by the enterprise data office, which helps drive accountability and ensures federated responsibility across key stakeholders.

Ready-Made Solution: Implement a ready-made solution in one go, streamlining the entire transition process. This approach aims for a swift and comprehensive changeover.

Risks: While the big bang approach can lead to rapid implementation, it also comes with potential unforeseen risks. The lack of subsequent phasing may result in challenges related to adoption, training, and system integration.

Phased Approach

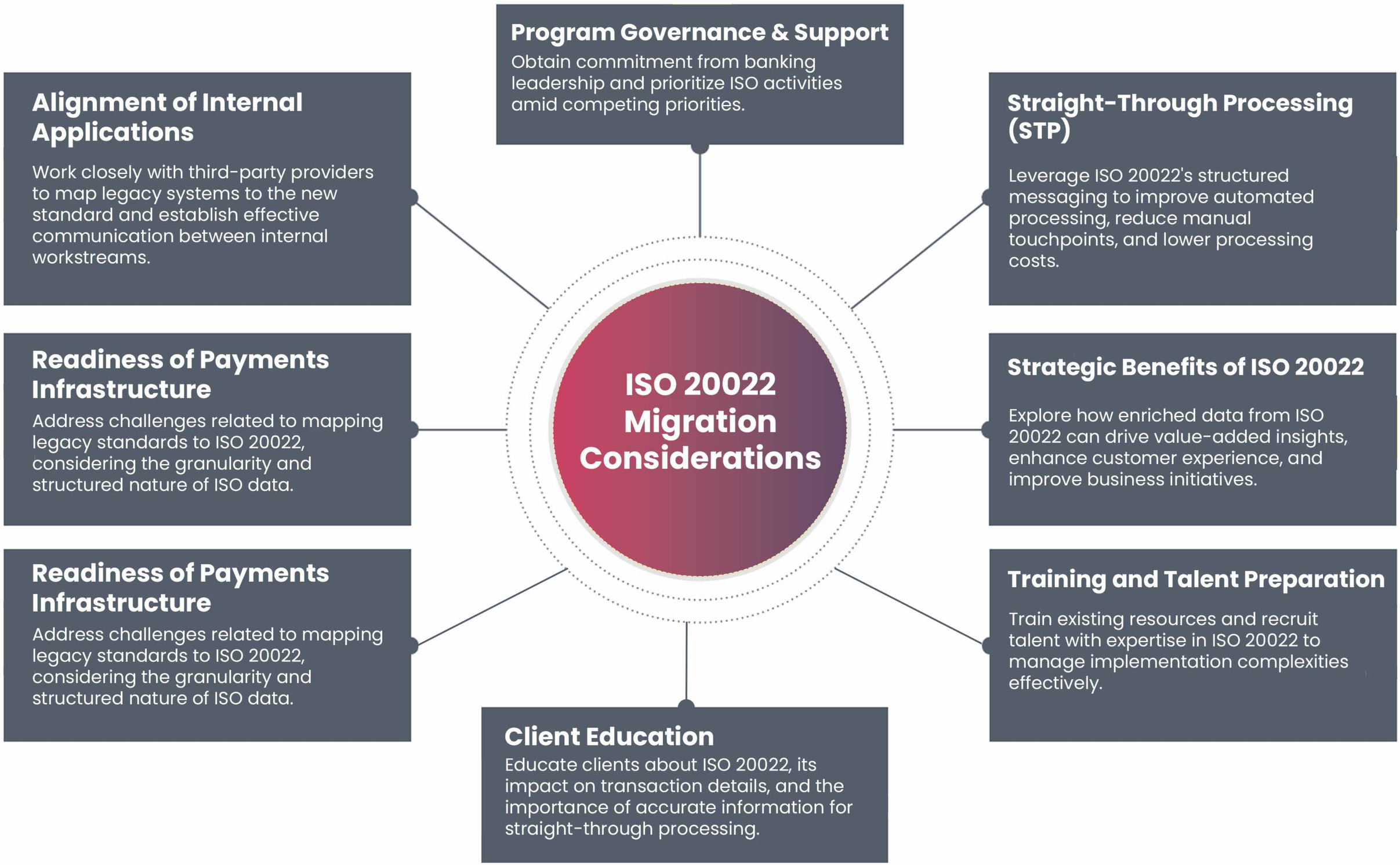
Incremental Implementation: In a phased approach, introduce the new system or product in stages, addressing local requirements step by step. This allows for a more gradual and controlled transition.

Module Sequencing: Modules emerge in a planned sequence, ensuring that each phase builds upon the previous one. This approach facilitates smoother integration and reduces the likelihood of disruption.

Coexistence of Systems: During the transition, the old and new systems must coexist and exchange or sync data as needed. This ensures continuity of operations and minimizes downtime.

Mitigating Risks: While a phased approach may take longer, it helps mitigate operational risks and potential issues related to reduced straight-through processing in the production environment. It allows for thorough testing and validation at each stage, reducing the likelihood of major disruptions.

Migrating to ISO 20022 involves several critical considerations across systems, operations, governance, and customer engagement. Here are the key areas that banks and financial institutions need to address during the transition:



Use Case	Sector	Sub-sector	Summary	Benefits
Vendor Payments	General	•	A corporate makes periodic payments to a supplier for services rendered. A single payment can sometimes cover multiple invoices. With ISO 20022, a payment can be sent with remittance data that details one or multiple invoices that a single payment is intended to cover. The vendor can receive confirmation of the payment credited to their account and information on what the payment is for, all at the same time.	• Automated reconciliation • Dataful Payments • Enhanced interoperability • Lower operational costs • Reduction in cheque use
Funds Disbursements	General	•	A corporate disburses funds to customers by submitting a bulk payments file to their financial institution. With ISO 20022 capability, each payment message can carry data on what the payment is for (e.g., customer account number), invoice number and any adjustments such as early payment discounts.	• Automated reconciliation • Dataful Payments • Lower operational costs • Reduction in cheque use
e-Invoicing	General	•	A biller sends electronic invoices with ISO 20022 request-to-pay functionality for monthly payments from customers who do not wish to set up pre-authorized debits (PADs) from their bank account. Payment links in the e-invoices enable customers to initiate payments with data fields pre-populated with info about the payment (e.g., invoice number).	• Automated reconciliation • Faster collections • Improved customer service • Lower operational costs • Reduction in cheque use
Matching historical payments	Telecommunications	• Commercial payments	If a company makes a repetitive payment, a Telco can use the historical payment to match and automatically apply a payment by reconciling between bank deposit and email.	• Faster collections • Faster payments processing • Improved customer service • Lower operational costs • Operational efficiency gains

Use Case	Sector	Sub-sector	Summary	Benefits
Refund payments	Telecommunications	• Postpaid	A Telco disburses refunds for multiple clients by submitting a bulk payments file to their financial institution. With ISO 20022 capability, each payment message can carry data on what the payment is for, including customer or invoice number and any adjustments (e.g., late payment fees).	• Dataful Payments • Enhanced interoperability • Faster payments processing • Lower operational costs • Reduction in cheque use
Bill payments	Telecommunications	• Postpaid	A Telco sends a payment request using ISO 20022 request-to-pay functionality to a customer for their monthly bill. The customer accepts by clicking on a payment initiation link in the message. A payment instruction is auto-populated with remittance information (e.g., customer/invoice number) that was part of the original payment request message. Funds are immediately transferred from customer to telco without the customer sharing any bank account details.	• Faster collections • Faster payments processing • Greater security • Improved customer service • Lower operational costs
Crediting prepaid minutes to prepaid mobile users	Telecommunications	• Prepaid	A telco credits prepaid minutes to its prepaid mobile users who are at the most fraudulent risk for telcos due to stolen credit cards usage. With ISO 20022 Telco providers could instantly receive payment and rich remittance data from prepaid users thus being able to instantly credit prepaid minutes without worrying about fraudulent payments (stolen credit cards).	• Better understanding of customer habits • Dataful Payments • Faster collections • Greater security • Lower operational costs
Commission Fees paid to Managing General Agents (MGAs)	Insurance	• Life & Health	A L&H insurer makes a payment to an MGA for commission fees owed that cover multiple corporate clients and coverages. With ISO 20022 payments, remittance data providing a breakdown can travel with the payment, which can be extracted to enable automated reconciliation when the payment is made.	• Automated reconciliation • Enhanced interoperability • Improved customer service • Lower operational costs • Reduction in cheque use

Use Case	Sector	Sub-sector	Summary	Benefits
Vendor Payments (for multiple invoices)	Insurance	• Life & Health • Property & Casualty	An insurer makes a periodic payment to a preferred vendor that covers multiple invoices. With ISO 20022, a single payment can be sent with remittance data that details all the invoices that a single aggregated payment is intended to cover. The vendor can receive confirmation of the payment credited to their account and information on what the payment is for at the same time.	• Dataful Payments • Enhanced interoperability • Lower operational costs • Operational efficiency gains • Reduction in cheque use
Commission Fees (paid to Insurance Brokers/Agents)	Insurance	• Life & Health • Property & Casualty	An insurer makes a payment to a broker for commission fees on policies the broker has sold over a period of time. The broker typically prefers payment by cheque with a detailed breakdown of payment for reconciliation purposes. With ISO 20022 payments, remittance data providing a breakdown can travel with the payment, which can be extracted to enable automated reconciliation when the payment is made.	• Enhanced interoperability • Lower operational costs • Operational efficiency gains • Reduction in cheque use
Claims Disbursements (through a Third-Party Administrator)	Insurance	• Life & Health	A Life & Health insurer pays a claim to a health services provider through a Third-Party Administrator (TPA). The TPA processes and approves the claim submitted by the provider and sends a payment request to the insurer with remittance data detailing what the payment is for. By accepting the payment request, the insurer initiates a payment with remittance data pre-populated in the payment message which can travel with the payment to the TPA, and ultimately to the service provider.	• Dataful Payments • Enhanced interoperability • Lower operational costs • Operational efficiency gains • Reduction in cheque use
Claims Disbursements (File-based payments)	Insurance	• Life & Health • Property & Casualty	An insurer disburses claims for multiple policies by submitting a bulk electronic payments file to their FI. Claims are paid directly to the insured, to beneficiaries (in the case of life insurance claims) or to intermediaries	• Dataful Payments • Enhanced interoperability • Lower operational costs • Operational efficiency gains

Use Case	Sector	Sub-sector	Summary	Benefits
Premium Collections (e-Invoicing for recurring payments)	Insurance	• Life & Health • Property & Casualty	An insurer sends electronic invoices with ISO 20022 request-to-pay functionality for monthly or annual premium payments due from those policyholders not set up for pre-authorized debit as they do not wish to share bank account info with the insurer. Payment links in the e-invoices enable policyholders to initiate payments from their bank accounts with data fields prepopulated with info about the payment (e.g., invoice number).	• Enriched customer experiences • Faster collections • Improved customer service • Operational efficiency gains • Reduction in cheque use
Premium Collections (Request-to-pay feature)	Insurance	• Life & Health • Property & Casualty	An insurer sends a payment request using ISO 20022 request-to-pay functionality to a policyholder when their monthly premium payment via direct debit fails to go through. The policyholder accepts by clicking on a payment initiation link in the message. A payment instruction is auto-populated with remittance data (e.g., policy number) provided by the insurer in the payment request message. Funds are immediately transferred from the policyholder to the insurer without the need to share bank account info.	• Faster collections • Faster payments processing • Greater security • Improved customer service • Operational efficiency gains
Premium Collections (from Insurance Brokers/Agents)	Insurance	• Life & Health • Property & Casualty	An insurer receives a single payment from an insurance intermediary (e.g., broker or agent) for premiums they collected on behalf of the insurer over a period of time. The broker/agent deducts their commission fees and other adjustments from the payment. With ISO 20022-enabled payments, richer data can travel with the payment, which could be extracted and used to automatically allocate the payment across multiple invoices/accounts.	• Dataful Payments • Enhanced interoperability • Lower operational costs • Operational efficiency gains • Reduction in cheque use