



Standardized Multi-Country EBS Implementation Using MT940, BAI, ISO 20022 and CAMT.053 in Global Treasury Operations

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Abstract

The global treasury operations process needs standardized financial data exchange because accurate and efficient data exchange capabilities enable businesses to handle their international banking relationships with multiple countries. The Electronic Bank Statements (EBS) system enables automated reconciliation processes while delivering cash visibility improvements and supporting strategic financial decision-making efforts. The presence of multiple bank statement formats including MT940, BAI2, ISO 20022, and CAMT.053 creates major difficulties because it results in data inconsistency problems and difficulties with system integration and operational efficiency. This review article examines the evolution and characteristics of these formats and evaluates their importance for handling treasury operations across multiple countries. The study demonstrates how legacy text-based formats such as MT940 and BAI2 fail to meet modern treasury requirements because these formats cannot process structured financial information with high data content. ISO 20022-based formats provide better system interoperability and data detail control and usage flexibility to support worldwide standardization needs through CAMT.053. The paper investigates three fundamental issues that emerge during multiple-country implementations including regulatory differences, data inconsistency, and interoperability challenges between systems. The standardization framework proposes a structured approach which establishes centralized treasury models and data mapping strategies and governance mechanisms at the highest level. The study demonstrates that ISO 20022 standard implementation increases automation while decreasing reconciliation work and improving overall treasury efficiency. Organizations must implement standardized formats to improve their global cash management processes while their treasury operations undergo digital transformation.

Keywords: Electronic Bank Statements; ISO 20022; CAMT.053; Treasury Management; Financial Standardization

1. Introduction

The expansion of multinational corporations resulted in more complex global treasury operations which required banks to handle banking relationships through multiple countries and currencies and different regulatory systems. Organizations need to process extensive bank transactions throughout each day while they maintain precise records and transparent operations and they complete reconciliation processes on time. The Electronic Bank Statements system enables organizations to automate cash management processes while they gain financial visibility and improve their reconciliation procedures. Financial organizations face an operational problem because their bank statement formats do not follow a common standard which varies between different regions and banking institutions.

Banks have traditionally used proprietary formats and semi-standardized formats which include MT940 and BAI/BAI2 to deliver account statements through different methods. Treasury operations have depended on these formats for decades yet modern financial systems require reliable and scalable formats which can manage structured data that contains complex financial information. Multinational organizations face rising implementation challenges and data

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mapping difficulties and operational expenses because their banking partnerships require management of diverse banking connections. Financial organizations need to establish a unified financial messaging system which uses standardized protocols for all their financial communications with external partners.

Standardization in financial data exchange establishes compatibility between systems while it eliminates system uncertainties and enhances system operational performance. ISO 20022 has emerged as the primary global messaging standard which enables financial institutions to achieve standardization in their communication methods. ISO 20022 supports advanced analytics and automation and regulatory compliance through its ability to enable data exchange which contains both structured and unstructured data in comparison to traditional formats. The CAMT.053 format developed under ISO 20022 has been accepted as the official electronic bank statement standard which provides organizations with detailed transaction information and better reconciliation methods. The SWIFT global financial network has established standardized communication systems which allow banks to send financial messages securely between their institutions throughout the world. The financial sector has adopted ISO 20022-based XML formats to replace legacy MT formats because these new systems support digital transformation and standardization across treasury and payment systems. This transition supports multi-country operations and improves operational performance.

This review article presents a complete examination of standardized implementations which use MT940 and BAI and ISO 20022 and CAMT.053 formats. It discusses critical implementation hurdles and explains how standardization can improve automation, data consistency, and financial control.

2. Background: Electronic Bank Statements and Treasury Operations

Treasury management systems use Electronic Bank Statements because it helps organizations download bank account details through electronic means which they need to use in their ERP and TMS systems. The automated system now handles bank reconciliation processes which need less human work and produces more accurate results and faster financial reports. Organizations need to process bank statements from multiple banks because they operate globally which helps them monitor their cash flow and handle their operational activities.

EBS supports bank reconciliation by enabling organizations to compare their internal records with actual bank transactions. Through effective reconciliation processes all data remains intact while any discrepancies get identified and all potential risks including fraud and financial misstatements get minimized. The organizations can handle their large transaction volumes with greater efficiency because they use standardized electronic formats which reduce their processing errors and operational costs [5]. The process of automated reconciliation supplies financial data which organizations need for their cash-flow forecasting and decision-making processes.

The different bank statement formats which financial institutions and different regions use make it difficult to implement EBS despite its benefits. The MT940 and BAI2 formats have been widely used across the globe since their introduction because both formats share common elements but their structural design and data detail level and regional usage differ. The absence of standardization causes problems during data mapping and data transformation and system integration which become especially critical for multinational companies who operate in different countries. The treasury teams need to spend a lot of time running specific format functions while they also need to make sure everything works with their internal system.

The adoption of standardized financial messaging formats shows a strong relationship with the development of modern financial systems which control global payment systems. The standardization efforts work to create common data exchange systems which will make it possible for banks to communicate with corporate systems through their existing systems. The implementation of common standards in financial systems leads to better performance because it decreases operational interruptions which happen during international transactions and settlement of financial transactions [6], [7]. Treasury operations depend on data exchange which needs to remain dependable and constant because it helps organizations handle their international cash flow management.

Structured data formats which are standardized for data processing have become essential because financial services are increasingly digitalized and new payment systems emerge. Financial systems require complete machine-readable data which enables them to perform automation and analytics and meet regulatory requirements. Data-rich formats which use XML as their base now fulfill these two requirements because they offer both flexible system capabilities and scalable design elements when compared to older text-based formats [8]. Organizations are moving towards EBS solutions which follow standardization because these solutions form part of their digital treasury transformation plans.

3. Overview of Bank Statement Formats

The various formats used for bank statements throughout history have created significant difficulties for international treasury operations, especially for organizations that handle multiple banking connections across different nations. The different formats developed according to regional needs and technological resources and banking institution requirements to create various patterns of data organization and data processing capabilities and system compatibility. The essential components for developing an Electronic Bank Statement (EBS) implementation framework require complete comprehension of the various formats together with their specific characteristics.

MT940 represents the most widely adopted electronic bank statement format among traditional banking systems which operate within the SWIFT messaging framework. The format delivers end-of-day account statements through its structured text format which presents account balances together with detailed records of transactions. The MT940 format enables international financial transactions yet its construction limits and minimal data options prevent its adoption for sophisticated automation and thorough reconciliation tasks. Data-driven treasury operations have exposed these operational restrictions that exist in the current system.

The BAI and BAI2 formats function as cash management and bank reconciliation tools which banks in the United States have implemented. The BAI2 system offers superior transaction coding capabilities compared to BAI format. MT940 enables users to generate more comprehensive account activity reports across the globe. The financial ecosystem requires modern non-text-based formats; however, MT940 and BAI2 remain text-based formats. The BAI formats restrict their use to specific regions because they require uniformity in implementation across all areas which have multiple legal systems.

The development of ISO 20022 has established a new standard for financial messaging systems since it serves as an international standard for financial messaging systems. ISO 20022 replaces traditional formats with XML-based structures which enable more detailed and flexible data presentation through ISO 20022. The system enables organizations to gather specific transaction details which help them enhance reconciliation processes and perform advanced analytical tasks. ISO 20022 establishes interoperability through its development of a standardized global framework which banks and systems and countries can use to create international financial communication systems [9], [10].

The CAMT.053 format serves as the recognized standard for electronic bank statements within the ISO 20022 framework. The system delivers complete account reporting through its presentation of both intraday and end-of-day account statements which include detailed transaction data. The CAMT.053 system enables organizations to automate their processes through its ability to map data exactly while requiring less manual work to complete reconciliation tasks. The financial industry is moving towards foundational ISO 20022 standards which establish shared data formats and enable system compatibility through CAMT.053 and MT940 transition [7], [8].

The treasury functions of an organization face difficulties when multiple formats exist during the transitional period which creates advantages for their operations. Organizations need to establish systems that enable simultaneous operation between their old and new formats which requires them to develop mapping systems and transformation systems. The transitional period allows companies to create new treasury processes which will enhance data quality and operational efficiency through the application of standardized procedures (Table 1, Figure 1).

Table 1 Comparison of Bank Statement Formats

Feature	MT940	BAI2	ISO 20022	CAMT.053
Format Type	Text	Text	XML	XML
Geographic Usage	Global	Primarily US	Global	Global
Data Structure	Fixed	Semi-structured	Highly structured	Highly structured
Data Richness	Low	Medium	High	Very High
Flexibility	Limited	Moderate	High	Very High
Automation Capability	Limited	Moderate	High	Very High
Future Relevance	Declining	Limited	Expanding	Dominant

BAI2 is the older of the two formats in the U.S. cash-management standard (1980). MT940 was introduced later by SWIFT for global bank statements. (1990). Also the both formats remain the international standard for cross-border treasury operations which are replaced by ISO 20022 XML formats such as CAMT.053.

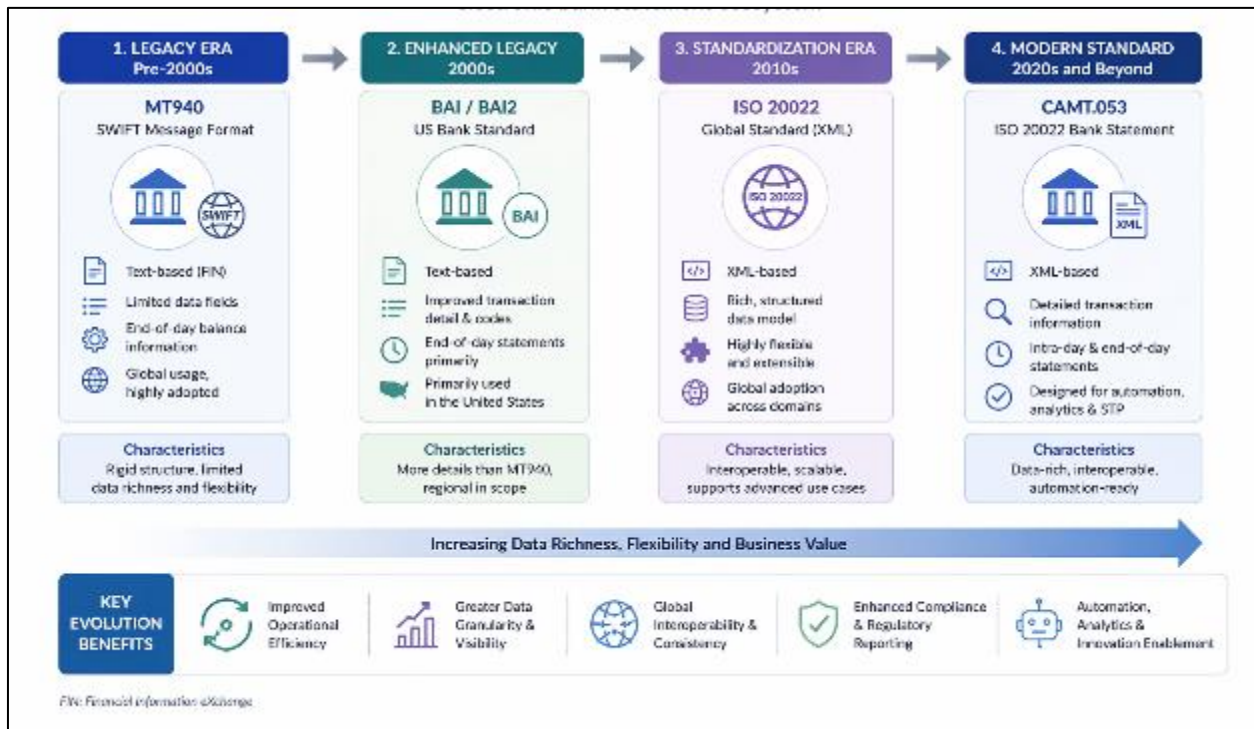


Figure 1 Evolution from MT940 to ISO 20022 CAMT.053.

4. Multi-Country Implementation Challenges

The implementation of a standardized Electronic Bank Statement (EBS) solution across different countries shows operational difficulties and technical issues and regulatory compliance problems. Multinational corporations establish connections with multiple banks which maintain different banking regulations and technological systems. The presence of different data formats together with different reporting standards and communication protocols creates obstacles to achieving a standardized bank statement processing system.

The banking industry faces its main difficulty because different countries maintain different banking standards and different local regulations. The specific rules which each country establishes for data reporting and transaction classification and compliance procedures impact the process through which banks create and transmit their bank statements. The banking industry uses ISO 20022 as its worldwide standard but banks choose different methods to implement it based on their local requirements which results in difficulties during the integration process. Organizations do not use standard implementation between their different departments which leads to reduced standardization outcomes that force treasury systems to require custom development work [13]. Outdated systems together with new technology create problems for banks because their infrastructure includes both types of systems. Organizations still use MT940 and BAI2 as their main format while they start to implement ISO 20022-based formats which include CAMT.053. To achieve interoperability between systems, the hybrid operational environment requires multiple data mapping and transformation processes. The entire system undergoes a fundamental change which affects data models and workflows and system architecture through the transition from legacy message types to modern XML-based standards [14]. Organizations require proper management procedures for their transition period because it impacts all treasury operations.

The implementation of EBS systems across multiple countries faces two fundamental challenges which involve maintaining high data quality and consistent data formats. The transaction descriptions and coding standards and reference fields which different banks use lead to reconciliation problems because banks employ different standards. The presence of incomplete and inconsistent data results in less effective automation processes which require additional manual work. The achievement of high-standard data requires solid data validation systems together with

established data mapping rules and active partnerships with banks to develop data definitions and format standards [15].

Integration with ERP and Treasury Management Systems (TMS) becomes more challenging when different formats and higher transaction volumes need to be processed. The implementation process requires handling format configuration and testing and ongoing maintenance which results in increased workload for all three implementation phases. The solution faces scalability challenges because organizations expand their global presence while they onboard new banking partners. The maintenance costs and system complexity grow substantially when organizations operate multiple systems without implementing standard operational procedures. The implementation of systems across multiple countries needs to overcome organizational obstacles which include governance challenges. The achievement of standardization needs different business units to work together with multiple regions and stakeholders who all have different priorities and limitations. The establishment of a centralized governance model together with global standard definition for EBS implementation needs execution to create consistent practices which will last into the future. The study of financial infrastructure development shows that standardization efforts need to work together to reduce operational fragmentation which will improve efficiency in international financial transactions [16].

5. Standardization Strategy and Implementation Framework

The implementation of Electronic Bank Statement (EBS) systems in different countries requires an organized approach which creates a complete system that combines technological solutions with governance systems and operational procedures. Organizations that operate in multiple countries must establish standardized banking procedures which enable their treasury systems to receive precise data from all banking organizations. Organizations can implement the framework to advance their current state from individual bank connections to a complete system which will expand according to their future requirements. The centralized treasury model acts as the main strategic element because it enables organizations to manage all banking connections through their Treasury Management System (TMS) or ERP system. Centralization enables organizations to eliminate unnecessary duplication of tasks while they establish standardized methods for processing data which improves their ability to track cash movements across their international operations. Organizations achieve consistent data handling by unifying bank statement processing into one system which creates data standards and establishes direct connections with their financial operations. Research shows that standardization becomes essential for improving interoperable performance in complex systems because it minimizes operational inefficiencies when combined with coordinated governance frameworks.

Data mapping and transformation capabilities function as essential tools which organizations need to operate their data processes. Organizations need to create mapping rules which enable them to transform legacy formats into ISO 20022-compliant structures. The transformation layer maintains data accuracy while enabling different systems to connect without problems. The transition to ISO-based messaging standards serves as an essential move toward increasing standardization which meets the rising need for structured financial data that machines can read and understand. Bank connectivity stands as the primary element which the standardization framework requires for its implementation. Organizations use secure channels such as SWIFT networks and host-to-host connections and API-based integrations to send financial messages to their banking partners. Organizations must evaluate their operational capabilities to select the most suitable connectivity model for their business requirements which includes assessing transaction volume and geographic coverage and existing technological abilities. Modern organizations use API-driven solutions because they enable real-time data sharing which helps organizations develop treasury operations that require constant updates. The financial infrastructure modernization process requires real-time system bridges between different operational systems which need this technology for business operations, now considered an industry standard.

EBS standardization initiatives need governance and standard-setting systems to maintain their operational success throughout their existence. Organizations must establish worldwide data standards which help them create implementation procedures while requiring all business departments to follow these standards. The process includes establishing standardized rules for handling transaction codes and reference fields and reconciliation procedures which will make operations easier while increasing automation effectiveness. Effective governance reduces the difficulty of operations while it enables the organization to expand by adding new banking partners and countries to its operations. The research shows that successful standardization depends on stakeholders being actively involved and working together toward common objectives.

Risk management and effective transition require organizations to implement a phased approach for their system implementation. Organizations need to start by standardizing their high-volume bank accounts which hold strategic value before extending their standardization to other areas. The standardization framework permits organizations to use incremental steps for testing operational processes and verifying that operational systems function correctly. The

organization will establish an EBS environment which will increase automation and improve data quality and expedite treasury operations as shown in Figure 2.

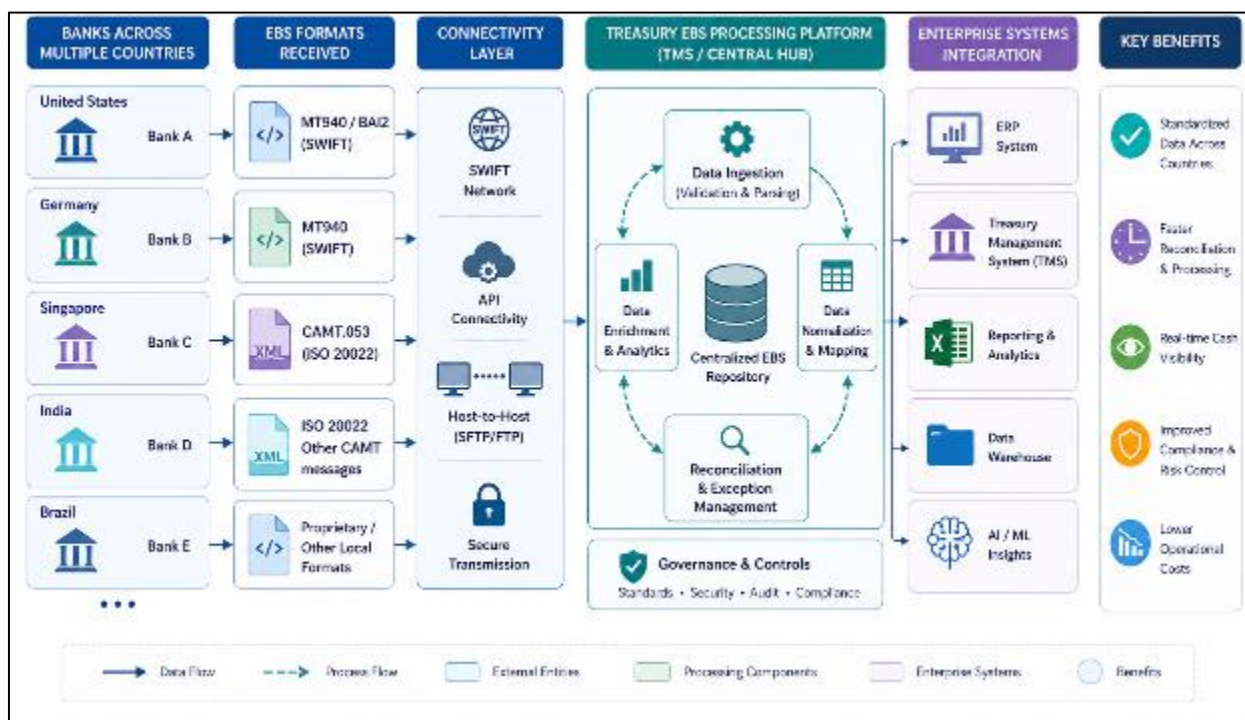


Figure 2 Multi-Country Treasury EBS Integration Architecture.

6. Conclusion

The standardization of Electronic Bank Statement formats across countries establishes a fundamental system which boosts operational efficiency while providing better transparency and control for international treasury management. The financial industry still uses MT940 and BAI2 as legacy formats, but these systems no longer provide adequate support for the requirements of contemporary data-driven financial operations. The adoption of ISO 20022 and CAMT.053 standards provide a comprehensive and adaptable framework which enables precise data transmission between different systems through standardized data elements that maintain operational compatibility. Standardized EBS solutions offer clear benefits; however, organizations face significant challenges during their implementation process because of diverse regulatory frameworks and difficulties connecting systems and using outdated file formats. Organizations must create a specific implementation strategy that requires strong governance and controlled system transitions to successfully manage their implementation difficulties. The use of standardized formats improves automation processes and reconciliation accuracy which drives digital transformation initiatives while enhancing treasury functions' strategic alignment with the worldwide financial system.

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