



Delivering Agile and Flexible Payment Solutions Using IBM Banking Industry Models

White Paper

Contents

	<i>Page</i>
<i>Introduction</i>	2
1 <i>Customers, Regulators and Efficiency Drive the Evolution of Payment Transformation Strategies</i>	3
2 <i>Banking Industry Model Support for Payment Transformation Strategies</i>	6
3 <i>Implementing Payment Strategies with IBM Industry Solutions</i>	12
<i>Conclusion</i>	13

About this White Paper

This paper is divided into the following chapters:

- Chapter 1 outlines the objectives of the white paper.
- Chapter 2 outlines some of the key drivers leading to the transformation of the payments business.
- Chapter 3 outlines how the Banking Industry Models can support the evolution of payment transformation strategies.
- Chapter 4 outlines a specific payment implementation solution that is closely aligned to the Banking Industry Models.

Who Should Read this White Paper?

This paper provides essential guidance for the following roles and skills within the organization:

- Senior managers, strategists and planners
- Business analysts
- Business modelers
- Solution architects
- Solution designers

The core of any payment transformation strategy is a clear understanding of customer needs. In addition, financial institutions are being challenged by onerous regulatory regimes and a need for increased efficiencies and cost savings.

The IBM Banking Industry Models offers financial institutions the opportunity to introduce agile and flexible processes with a view to reducing cost, increasing operational efficiency and improving customer service.

Achieving and exceeding their customer demands in the payments space creates the opportunity for financial institutions to differentiate themselves from the competition.

Introduction

The core of any payment transformation strategy is a clear understanding of customer needs as well as the diverse channels and business environments in which customers operate. These environments are increasingly complex as financial institutions are challenged by onerous regulatory regimes, while seeking to offer customers the cost savings and efficiency improvements they demand. The challenge is all the more critical considering the payments business is a high-impact cost and revenue driver within financial institutions.

Faced with these pressures, financial institutions are driven to rethink their business strategy and operational plans towards payments. These institutions are being challenged to maintain profitability in the face of increased competition. These challenges are focusing minds to achieve seamless, end-to-end, straight-through processing (STP) for both retail and wholesale payments.

The IBM Banking Industry Models, more commonly referred to as the Information FrameWork (IFW), offers financial institutions the opportunity to introduce agile and flexible processes with a view to reducing cost, increasing operational efficiency and improving customer service. Underpinning this approach is a need to align the requirement of business and information technology (IT) using a structured, model-driven development approach. Any successful initiative in this regard can only be achieved through the adoption of a clear and unambiguous, common business language that is utilized by both development streams. This is one of the key deliverables provided by the IBM solution.

The approach advocated by the Banking Industry Models seeks to optimize customer experience as financial institutions can only prosper in new business environments if they offer customers better service, lower fees, a single point of entry and expeditious clearing. Achieving and exceeding their customer demands in this space creates the opportunity for financial institutions to differentiate themselves from the competition, offer value-added services and, as a consequence, provide further revenue-generating capabilities.

1. Customers, Regulators and Efficiency Drive the Evolution of Payment Transformation Strategies

Customer specifications, regulatory compliance and cost and efficiency drivers will be among the key determinants in defining payment strategies.

Customer specifications, regulatory compliance and cost and efficiency drivers will be among the key determinants in defining payment strategies within financial institutions in the years ahead. Existing payment systems are a major impediment to operational efficiency resulting in negative customer experiences. Furthermore, process efficiency tends to remain low and is duplicated across products and lines of business. Financial institutions need to address the threats to profitability by achieving seamless, end-to-end STP from customer initiation through to final notification of involved parties, while offering value-added information and services.

Payment solution costs remain high due to the varied approach financial institutions take to making, receiving and reconciling payments as well as the level of manual interventions in end-to-end processing.

Payment solution costs remain high due to the varied approach financial institutions take to making, receiving and reconciling payments as well as the level of manual interventions in end-to-end processing. If financial institutions want to achieve maximum cost effectiveness, process efficiency and facilitate an enterprise-wide risk management approach, it is critical that they move towards a more homogeneous, standardized business model that maximizes reuse of processes across product lines. Institutions need to take an integrated approach to payments to reduce cost and complexity. This is a further key to achieving competitive advantage.

IBM provides the means for financial institutions to achieve business and information technology alignment through its business process management (BPM) and service-oriented architecture (SOA) strategies.

The global payments business depends heavily on industry standards to facilitate efficient payment transactions. For example, in order to meet Single European Payments Area (SEPA) requirements,¹ spending on payment transformation strategies will approach EUR 5 billion by 2010. The standards advocated across the globe are further pushing the industry to improve efficiency by reducing complexity in cross-border transaction processing. This implies that financial institutions will have to converge towards standards, such as ISO20022 and web services, to provide even more customized solutions.

IBM provides the means for financial institutions to achieve business and IT alignment through its business process management (BPM) and service-oriented architecture (SOA) strategies and more specifically in terms of its approach for a structured, model-driven development methodology based on industry standards. As outlined in Figure 1, these related approaches help organizations to achieve the required agility and flexibility in order to reduce costs, increase efficiency, improve customer service and enhance flexibility.

¹ Boston Consulting Group – 'Weathering the Storm' 2009

BPM provides the business context, understanding and metrics, while SOA provides a governed library of well-architected service and information building blocks.

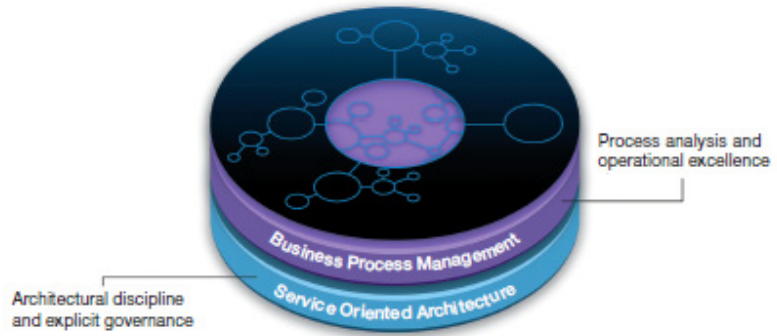


Figure 1 – BPM and SOA: Combining Business and IT Flexibility

IBM believes the adoption of a model-driven development (MDD) strategy can help financial institutions to achieve convergence across lines of business, and accelerate the transition from a disparate and inefficient, silo-based approach. The road toward strategic change, however, involves the right vision, proper understanding of the existing portfolio, the ability to define and execute the right projects with the applicable scope and a robust platform that ensures the integrity, reliability and scalability of business processes across the enterprise. Key business and IT benefits are to be derived from the adoption of a BPM and SOA approach, some of which are outlined below.

Business Benefits

- Business flexibility provided by increased process granularity enabled through services
- Ability to create business processes and composite applications quickly to respond to changes in the marketplace
- Improved customer service without having to worry about the underlying IT infrastructure

IT Benefits

- Become a more responsive IT organization with a secure and managed integration environment
- Decrease development, deployment and maintenance cycle times and cost through the use of prebuilt and reusable services

While BPM and SOA each have value in their own right, IBM believes that they are naturally synergistic, and perform best when implemented together for business and IT agility, optimization and alignment.² When undertaken simultaneously, BPM provides the business context, understanding and metrics, while SOA provides a governed library of well-architected service and information building blocks. Both are needed in order to optimize investments dynamically, drive operational excellence and manage business risk.

² 'Achieving business agility with BPM and SOA together' – Jensen, High and Mills (IBM)

Financial institutions will need to adapt flexible and agile models that can be extended and modified as new regulatory requirements come on board.

A further driver for payment transformation is regulatory compliance. Regulatory concerns and the mitigation of specific regulatory requirements such as Basel II, Sarbanes Oxley (SOX), SEPA, Faster Payments, Payments Service Directive (PSD), Anti-Money Laundering (AML), US Federal Reserve Act (2009) are increasing the level of payment reengineering. Therefore, financial institutions will need to adapt flexible and agile models that can be extended and modified as new regulatory requirements come on board.

Specifically in relation to payments, financial institutions will be required to measure and manage liquidity risk. Failure to manage this exposure can result in a liquidity crisis across multiple payment, clearing and settlement schemes globally. Financial institutions need to implement an enterprise-wide risk architecture to monitor intraday positions across each payment system, broken down by major counter party and corporate or institutional customer. They also need to implement an enterprise-wide governance structure to manage payment liquidity and counter-party risks.³

The following section outlines how these transformation issues are addressed and resolved based on the IBM Banking Industry Models.

³ 'Regaining customer trust through payment services' – Nacamuli, Castleberry, Girompini, Hissam and Klipin (IBM)

2. Banking Industry Model Support for Payment Transformation Strategies

The IBM Banking Industry Models provide comprehensive business support for payments, helping financial institutions to achieve their strategic payment objectives by adopting and leveraging best practices and open standards advocated by IBM's vision of BPM and SOA. At the heart of this flexibility are the IBM Banking Data, Process and Service Models that allow financial institutions to create a bridge between their business and IT projects. The key elements of Banking Industry Models are outlined in Figure 2 below.

The IBM Banking Industry Models provide comprehensive business support for payments, helping financial institutions to achieve their strategic payment objectives by adopting and leveraging best practices and open standards advocated by IBM's vision of BPM and SOA.

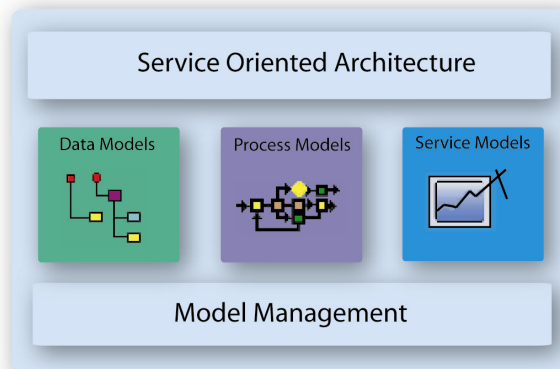


Figure 2 – Banking Industry Models

- **Data Models**
Provide a structured data dictionary that defines the business terms and phrases used within a given industry, providing the underlying, common business language to be used by business and IT.
- **Process Models**
Provide predefined, analysis-level business processes to ensure consistency and reuse of processes and activities within the financial institution.
- **Service Models**
Provide the predefined analysis and design-level structures to enable more consistency and reuse in the creation of services, interfaces and components.

Financial institutions willing to gain an understanding of the current diversity and silo-driven approaches that exists in their payments solution and look towards process reengineering using a structured model-driven approach that aligns business and IT can benefit from increased volumes and lower costs through the definition of enterprise-wide payment services.

The Banking Industry Models specifically support institutions in fast tracking

their payment transformation strategies by offering organizations the means to reengineer their solutions in the following areas:

- **Payment Mandate and Instruction Creation Support**
 - Administer Direct Debit Mandate
 - Administer Direct Debit Change Details
 - Administer Standing Order Mandate
 - Create Payment Instruction
- **Payment Transactional Support**
 - Administer Out-payment
 - Administer Direct Debit Collection
 - Administer Credit Transfer Out-payment
 - Administer Transaction Card Out-payment
 - Administer Withdrawal
 - Administer In-payment
 - Administer Interbank In-payment
 - Administer Transaction Card Clearing
 - Administer Deposit
 - Administer Transaction Card Clearing
- **Payment Exception and Reversal Support**
 - Administer Payment Exception
 - Administer Payment Reversal
- **Ancillary Payment Support**
 - Acquire Clearing Item Deposit
 - Provide Paid Check Image (Check 21)
 - Administer Positive Pay
 - Administer Reverse Positive Pay
 - Administer Accounts Receivable Invoice Issuance
 - Provide Account Transfer (internal to financial institution)
 - Analyze Check Payment Float
 - Administer Deposited Clearing Item Rejection
 - Accept Stop Payment Request
 - Administer Referral Item

IBM's structured, model-driven development approach commences with financial institutions investigating their payment projects systematically to understand their strategic prioritizations and pain points. The IBM Component Business Model (CBM) enables financial institutions to identify gaps, determine investment opportunities and recognize critical initiatives for value creation. Fundamentally, this approach aggregates business activities into components that can be shared across the financial institution. In effect, this model is used to define what problem needs to be addressed on the payments project. Part of the CBM exercise is to gain an understanding of the payment systems currently

The IBM Component Business Model (CBM) enables financial institutions to identify gaps, determine investment opportunities and identify the critical initiatives for value creation.

maintained, and map these to individual components with a view to assessing possible duplication of processing effort.

Once the project scope has been identified, the Banking Industry Models can support the downstream phases of the project development life cycle in terms of how the problem will be fixed, initially at a business level and subsequently at an IT level.

The Business Process Model plays a critical role in defining a service-based architecture.

The Business Process Model plays a critical role in defining a service-based architecture. Only through analysis of the processes supporting the operations of a financial institution can the service candidates that will best support those processes be identified. Process analysis also provides essential information about the context of those services, capturing requirements governing the applications that call services within the architecture and the human roles within the organization that interact with those applications.

The Banking Process Model has in excess of 530 business processes that can support and fast-track organizations in their reengineering projects. A significant number of business processes relate directly to payments. An example of one such process is Administer Out-Payment. As outlined in Figure 3, this process can be decomposed to provide template solutions for administering credit transfers, direct debits, card payments or withdrawals for both retail and wholesale customers.

The Banking Industry Models have in excess of 530 business processes that can support and fast-track organizations in their process reengineering projects.

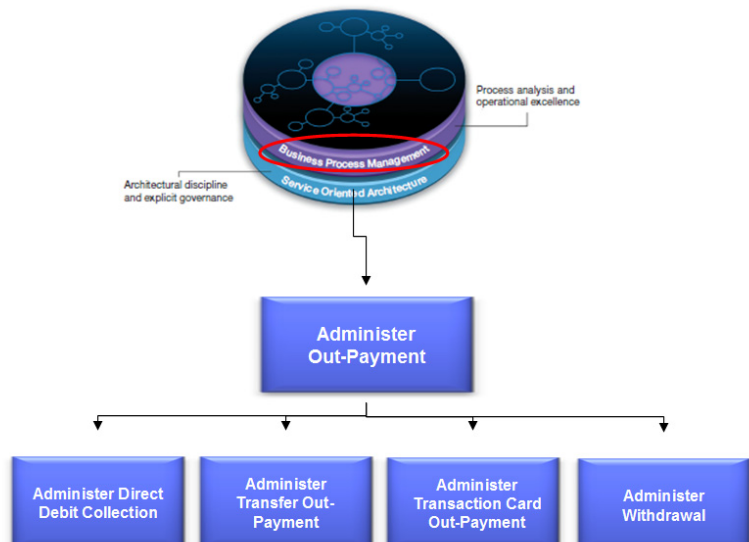


Figure 3 – Business Process Model for Banking

The process templates are the starting point for the definition of the optimum business representation. Financial institutions appraise their own capabilities and identify elements that result in driving effective, competitive differentiation, and extend and customize accordingly in order to accelerate the definition of

Banking Industry Models assist financial institutions in identifying what can be reused across geographies, alternative payment instruments or even other lines of business.

The IFW Service Models are a logical progression from business process analysis and facilitate further analysis of the reusable elements within a business process.

FS-BOM allow for the identification of candidate business services and the capturing of additional requirements such as type definitions that support the service input and output.

their optimum business representation. Some activities depend on large volumes and economies of scale to reduce costs, but offer little competitive opportunity. These are clearly prime targets for outsourcing to other institutions or shared-service centers that are operated within the financial institution or by third parties. For those components yielding competitive value and retained in house, the Banking Industry Models assist financial institutions in identifying what can be reused across geographies, alternative payment instruments or even other lines of business in terms of business model content. Implementing the Models significantly reduces the time and costs in getting to market (and therefore increasing ROI) the new, fully integrated business and technology infrastructure. This focus on core competencies will result in increased revenues, reduced costs and leveraging economies of scale, thereby meeting the increasingly aggressive demands of customers and regulators.

A core objective in achieving cost savings and enhanced efficiencies is to optimize STP. The Banking Service Models are a logical progression from business process analysis, and facilitate further analysis of the reusable elements within a process. These models allow for the identification of candidate business services. These reusable elements are identified within the Financial Services Business Object Model (FS-BOM) as use cases that isolate the proposed service definitions and allow the capturing of additional requirements such as type definitions that support the service inputs and outputs, interactions between services and delegation patterns that support the business of the financial institution.

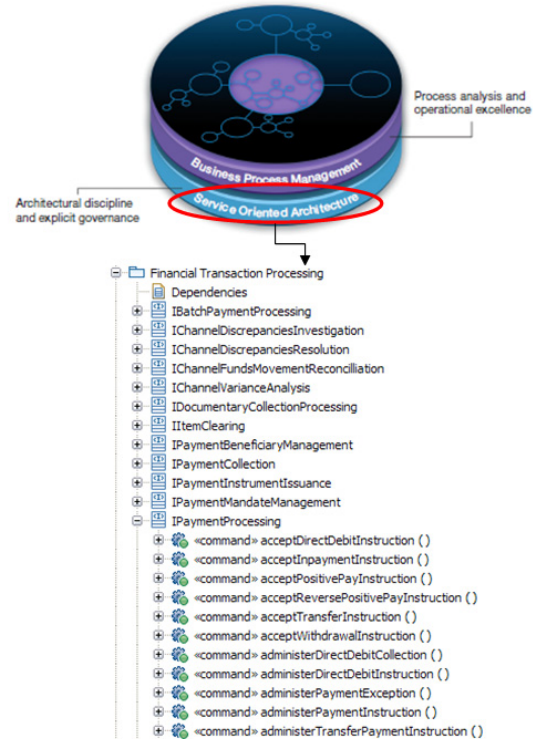


Figure 4 – Business Service Models for Banking

FS-IDM provides a standard set of interface and service definitions, in addition to, defining highly reusable components for the financial services.

The requirements captured within FS-BOM can be used to construct a detailed design model of the actual services required to support the project. These service definitions, examples of which are outlined in Figure 4, are defined in the Financial Services Interface Design Model (FS-IDM), which is a component-based model that is used to:

- Define a standard set of interface and service definitions to promote the development of interoperable financial services industry software
- Define highly reusable components for the financial services industry by applying the principles of component-based development
- Define assets for the design phase of object and component-based projects

FS-IDM can also facilitate bottom-up analysis. This approach differs from a pure top-down analysis in that it takes more account of the existing systems that ultimately support the designed services. While it is important that requirements analysis is not biased by the limitations of back-end systems, a top-down approach will often result in extremely heavy reliance on an adaptation layer to translate between capabilities exposed through service architecture and the support for those services in the back end. Apart from being a difficult undertaking from an engineering point of view, this adaptation can also significantly impact performance and throughput.

FS-IDM is closely aligned with IBM's vision on SOA where the SOA value proposition is centered on agile and aligned business as well as IT design and delivery. It is important to realize that business agility derived from BPM and SOA has lasting value only when processes and services are reliable, scale to the demands of use and protect against corruption or misuse of critical business information. Maintaining business performance and integrity in the face of change is critical and requires a reliable, adaptable and scalable environment, organizationally as well as technologically.

FS-IDM is closely aligned with IBM's vision on SOA.

3. Implementing Payment Strategies with IBM Industry Solutions

Industry Solutions support a number of implementation strategies, one of which is the Banking Industry Framework.

As outlined in Figure 5, IBM Industry Solutions support a number of implementation strategies, one of which is the Banking Industry Framework. A core support area in the Framework is payments and securities, which provides an architectural foundation based on software, best practices, services, industry extensions and accelerator assets that enable financial institutions to renovate existing payments systems progressively to enable STP and more rapidly deploy new, reusable payments components.

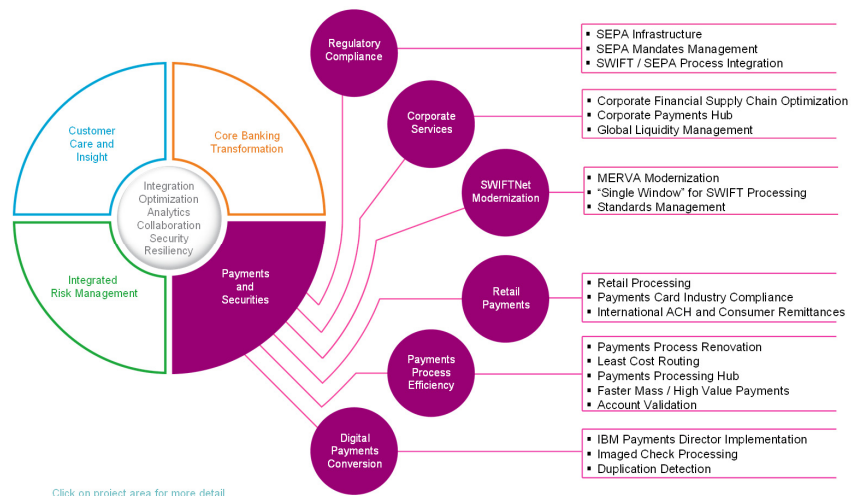


Figure 5 – Industry Framework: Payments

FTM allows for the implementation of a “payments-aware” integration layer to manage, orchestrate and monitor financial transactions.

The Financial Transaction Manager (FTM) is a key component of the Framework and is closely aligned with the Banking Industry Models. FTM allows for the implementation of a “payments-aware” integration layer to manage, orchestrate and monitor financial transactions. FTM is open to the adoption of components from a broad and growing IBM Business Partner ecosystem, all based on industry data standards and canonical formats. The common data and message models are based on the ISO 20022 industry standard. This standard, in turn, provides the basis for defining the interfaces to the standard FTM services.

Conclusion

Customers, regulators and a need for increased efficiency and cost savings are all key determinants in driving payment transformation projects within a financial services organization. Agility is a key requirement for understanding how to adopt new business and IT changes rapidly to ensure operational dexterity and flexibility.

The IBM Banking Industry Models offer financial institutions the opportunity to introduce agile and flexible processes with a view to reducing cost, increasing operational efficiency and improving customer service using a structured, model-driven development approach. These models provide the means for organizations to understand their business drivers more fully and accelerate their business payment reengineering project, which can allow for higher degrees of STP processing and provide the means to rationalize the payments application portfolio of a financial institution, while possibly identifying new platform solutions that will drive further efficiencies and cost savings. This will result in greater customer satisfaction, leading ultimately to the enhancement of the financial institution's reputation through its ability to claim conformance with regulatory initiatives, which increases the integrity of their product offering in the marketplace.



IBM Industry Models & Assets

IBM Ireland

Building 6

Dublin Technology Campus

Damastown Industrial Estate

Mulhuddart

Dublin 15

Ireland

ibm.com

IBM is a registered trademark of International Business Machines Corporation.

References in this publication to IBM products, programs or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program or service is not intended to imply that only IBM 's product, program or service may be used. Any functionally equivalent product, program or service may be used instead.

This publication is for general guidance only.

© Copyright IBM Corp. 2011. All Rights Reserved.