IBM Payments Framework for Financial Networks
FSS Industry Discovery Series
Renovate, consolidate, and simplify financial services payment platforms

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Software Group Services SOA Architect ASEAN leechar@sg.ibm.com
Merging of Payments LOBs

‘European banks each expect to invest $80m - $120m in their payments businesses over the next 5 years.’

This means that the 75 top European banks will spend $6B to $9B during that period.

BCG “Preparing for the Endgame”

SEPA

Over the next 6 years, the investment costs to the European banking industry for payment related cross-border transparency initiatives, over and above the technology funding for other purposes, will exceed $10 billion.

Tower Group

Corporations

Are unable to integrate their invoicing with their payments. The extra workload involved…runs to €50 billion a year.

European Commissioner for Internal Market and Services, ‘A vision for the future of payments in Europe’

BTO / BPTS

• “Local banks” must partner & outsource
• “Regional Heavyweights” should selectively adopt partnerships for chosen products and services
• “Global giants” have sufficient scale to establish themselves as insourcers, typically based on offshore operating centres

BCG “Preparing for the Endgame”

UK Faster Payments

Mandates that UK banks are able to make account-to-account transfers in 15 seconds, by Nov ’07. Some banks have batch processes which take several hours. We estimate this opportunity to be worth £150m in ’06 and £75m in ’07.

IBM Payments Team

Check21

Eliminates the paper return problem, facilitating Image Exchange. Game Changing opportunity for clients, Remote Capture, Real time Anti-Fraud and Payments Conversion

Checks are now just another Electronic Payments Message

IBM Payments Team
Industry Level Drivers Also Influence Payment Systems

*Market Demand, Regulation, Technology and Competition*

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### Top 10 Business Drivers, Strategic Responses, and IT Initiatives in Global Payments (2008)

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<thead>
<tr>
<th>Business Drivers</th>
<th>Strategic Responses</th>
<th>Technology Initiatives</th>
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<tr>
<td>1. Commoditization of payments processing</td>
<td>Develop value-added services</td>
<td>Implement cost analysis tools and price optimization software</td>
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<td>2. Downward pressures on revenue</td>
<td>Manage the shift from paper to electronic payments</td>
<td>Implement mobile payments application solutions</td>
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<td>3. Payments convergence</td>
<td>Increase market share and fee income</td>
<td>Centralize payments and exception data</td>
</tr>
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<td>4. Competition</td>
<td>Innovate product development and packaging</td>
<td>Reduce latency in the back office</td>
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<tr>
<td>5. Emerging payments and payment options</td>
<td>Improve client service tools and quality</td>
<td>Rationalize use of technology resources</td>
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<tr>
<td>6. Regulation and compliance</td>
<td>Conduct smart-sourced processing analysis</td>
<td>Implement business intelligence and client management solutions</td>
</tr>
<tr>
<td>7. Faster payments processing</td>
<td>Enhance monitoring and exception management</td>
<td>Develop enterprise payment models, frameworks, and applications</td>
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<tr>
<td>8. Shifting fraud and risk trends</td>
<td>Develop centralized fraud and AML strategy</td>
<td>Provide consistency of data across delivery channels</td>
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<tr>
<td>9. Globalization</td>
<td>Consolidate payment service providers and banks</td>
<td>Implement and manage standards</td>
</tr>
<tr>
<td>10. “Green” initiatives</td>
<td>Develop “green” policies, processes, and products</td>
<td>Implement SOA and application integration technology</td>
</tr>
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Note: AML = anti-money laundering, SOA = service-oriented architecture.

Source: The Tower Group, 2008 Top 10 Business Drivers
Executive Needs for the Business of Payments

- **Drive for top-line growth and customer retention**
  - Entering a new market or geography
  - Integrating new acquisitions or mergers

- **Business Agility**
  - Changing customer requirements
  - New product offerings
  - Responding to competition from outside your own geography
    - Global banks entering local markets. Non-traditional competitors

- **Doing more for less – reducing expenses**
  - More automation (i.e. straight through processing)
  - Less human-task requirements
  - Replacement of older systems going out of support

- **Compliance with new standards and regulations**
  - Avoidance of fines (substantial), loss of customers, forced changes on others’ timelines
The Central Business Issue in Payments Systems is Efficiency

Payments systems need to:
- Reduce time to market for new services and offerings
- Facilitate financial supply chain transparency
- Reduce duplicate systems
  - Like, applications, processes and functions
  - Data warehouses, AML and other checks
- Lower maintenance & system testing
- Extract value from existing systems
- Reduce overall support needs
- Less human interaction and expense
- Incremental projects with granular ROI
- Facilitate addition of new applications

“The payments business constitutes up to 35% of revenues and 40% of costs for banks”

Boston Consulting Group
What can be Used to Match Business Needs to IT Realities?

How can I…

…meet these business objectives?

…leverage my existing resources and IT systems?

…deliver at a pace and cost providing competitive advantage?
Component Business Modeling

Operations divided into: 60-80 business components and 150-300 critical business processes
Business Design Models for Software (Information FrameWork)

- Enables business users to easily scope and customize their own requirements
- Facilitates step-by-step business-focused development and roll-out
- Delivers regularly updated business, technical and regulatory content
- Creates open technology platform for any application or integration solution
- Manages definitions and standards in complex IT environments
IFW Contains Models, Best Practices, and Templates

The Payments Value Chain Help Solve Complex Client Payment Challenges

- IFW Support for In-Payment (Retail and Wholesale)
  - Administer In-Payment
  - Enact In-Payment
  - Verify Involved Party Access Authority
  - Retrieve In-Payment Profile
  - Accept In-Payment Instruction
  - Verify In-Payment
  - Record In-Payment Details
  - Apply Accounting Entries
  - Schedule In-Payment
  - Calculate Short-Term Cash Inflow
  - Generate Communication Details

- IFW Ancillary Payment Processes
  - Provide Paid Check Image (Check 21)
  - Administer Positive Pay
  - Administer Reverse Positive Pay
  - Provide Accounts Receivable Invoice Issuance
  - Provide Account Transfer (internal to financial institution)
  - Analyze Check Payment Float
  - Administer Clearing Item Rejection
  - Administer Deposited Clearing Item Rejection
  - Accept Stop Payment Request
  - Administer Referral Item
## Assets in the IBM WebSphere Banking Payments Pack

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<th>Reference Business Services Templates</th>
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<th>Payments Common Services</th>
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<td>Payment Volume Analysis</td>
<td>ISO 20022 Customer Credit Transfer Initiation V02 Reject Repair Service</td>
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<td>Corporate Sweeps</td>
<td>Payments History</td>
<td>ISO 20022 Customer Credit Transfer Initiation V02 Unbundling Service</td>
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<td>Create Account</td>
<td>Payments Status</td>
<td>ISO 20022 Customer Credit Transfer Initiation V02 Validation Service</td>
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<td>Create Wire Entries</td>
<td>Peak Payments Volume Analysis</td>
<td>ISO 20022 Customer Direct Debit Initiation V01 Reject Repair Service</td>
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<td>Funds Control</td>
<td>Pending Transaction Analysis</td>
<td>ISO 20022 Customer Direct Debit Initiation V01 Unbundling Service</td>
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<td>Inbound Payment Exception</td>
<td>Profile Analysis</td>
<td>ISO 20022 Customer Direct Debit Initiation V01 Validation Service</td>
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<td>Manage Inbound Payments</td>
<td>Reject Payment Analysis</td>
<td>ISO 20022 Customer Payment Reversal V01 Reject Repair Service</td>
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<td>Manage Pending Payments</td>
<td>Track Payment</td>
<td>ISO 20022 Customer Payment Reversal V01 Validation Service</td>
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<td>Open Case</td>
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<td>ISO 20022 Payment Cancellation Request V01 Reject Repair Service</td>
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<tr>
<td>Optimize Payment Routing</td>
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<td>ISO 20022 Payment Cancellation Request V01 Validation Service</td>
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<td>Perform Interactive Payment</td>
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<td>Image Transformation</td>
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<td>Perform Investment Payment</td>
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<td>Perform Lending Payment</td>
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<td>Perform Payroll Payment</td>
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<td>Perform Trust Payments</td>
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<td>Perform Vendor Payment</td>
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<tr>
<td>Review/Release Payment</td>
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<td>Setup Payments Profile</td>
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<td>Validate Customer Qualification</td>
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<td>Central Bank Position</td>
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<tr>
<td>Customer Payment Analysis</td>
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</tbody>
</table>

### Payments Business Glossary

- ISO 20022 Standards
- NACHA Standards
- IFW Business Object Model

### Payments Business Object Model

- ISO 20022 based Banking Payments Business Object Model
## Payments Service Interfaces
- Accept Inpayment Instruction
- Accept Outpayment Instruction
- Accept Positive Pay Instruction
- Accept Reverse Positive Pay Instruction
- Accept Transfer Instruction
- Activate Product Arrangement
- Administer Arrangement Details Modification
- Administer Arrangement Suspension
- Administer Arrangement Termination
- Administer Business Account Closure
- Administer Product Arrangement Completion
- Administer Product Arrangement Reactivation
- Administer Product Arrangement Suspension
- Allocate Funds
- Apply Arrangement Fee
- Apply Customer Behavior Score
- Apply Fee Accounting Entry
- Apply Funds Sweep
- Approve Access Item Issuance Document
- Approve Transaction
- Calculate Mark To Market Value
- Calculate Mismatched Cash Flow Value
- Calculate Net Cash Balance Position

## Payments Service Interfaces
- Calculate Reserve Requirement
- Determine Reservation For Withdrawal
- Enact Inpayment
- Enact Positive Pay
- Enact Reverse Positive Pay
- Evaluate Customer Loyalty
- Evaluate Customer Risk
- Evaluate Involved Party Behavior
- Generate Communication Details
- Identify Customer
- Identify Product For Arrangement
- Identify Query Resolution Owner
- Issue Outpayment
- Issue Query Response
- Maintain Reservation For Withdrawal
- Modify Outpayment
- Modify Product Arrangement
- Modify Product Arrangement Conditions
- Offer Product Arrangement
- Open Business Account
- Order Access Item
- Override Transaction Authorization
- Prepare Communication Response
- Prepare Outpayment
- Provide Access Item

## Payments Service Interfaces
- Provide Account Transfer
- Provide Arrangement Balance Calculation
- Provide Arrangement Statement
- Provide Front Office Settlement
- Provide Interbranch Settlement
- Record Arrangement Acceptance Details
- Record Arrangement Relationship Details
- Record Check Status
- Record Communication
- Record Communication Profile
- Record Contact Preference
- Record Credential Details
- Record Customer Credit Rating
- Record Customer Details
- Record Involved Party
- Record Involved Party Financial Position
- Record IP Relationship Information
- Record Successful Repayment History
- Record Transfer Service Profile
- Record Unsuccessful Repayment History
- Register Access Item Identifier
- Reissue Expired Access Item
- Reject Transaction
- Request Access Item Issuance
## Payments Service Interfaces

- Request Access Item Production
- Request Access Item Receipt Confirmation
- Request Access Item Suspension
- Provide Arrangement Statement
- Provide Front Office Settlement
- Provide Interbranch Settlement
- Record Arrangement Acceptance Details
- Record Arrangement Relationship Details
- Record Check Status
- Record Communication
- Record Communication Profile
- Record Contact Preference
- Record Credential Details
- Record Customer Credit Rating
- Record Customer Details
- Record Involved Party
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- Record IP Relationship Information
- Record Successful Repayment History
- Record Transfer Service Profile
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- Register Access Item Identifier
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## Payments Service Interfaces

- Request Access Item Production
- Request Access Item Receipt Confirmation
- Request Access Item Suspension
- Request Access Item Termination
- Request Access Item Receipt Confirmation
- Request Transaction Authorization
- Retrieve Arrangement Details
- Retrieve Check Profile
- Retrieve Communication Profile
- Retrieve Contact Preference
- Retrieve Credential Details
- Retrieve Customer Credit Rating
- Retrieve FullCustomer Details
- Retrieve Inpayment Profile
- Retrieve Invoice Profile
- Retrieve Involved Party
- Retrieve Involved Party Details
- Retrieve Involved Party Financial Position
- Retrieve Involved Party For Role
- Retrieve Involved Party Lifetime Value
- Retrieve Involved Party Role Details
- Retrieve IP Relationship Information
- Retrieve Known Contact Points
- Retrieve Liability Portfolio Details

## Payments Service Interfaces

- Retrieve Outpayment Profile
- Retrieve Pending Events
- Retrieve Repayment History
- Retrieve Short Term Liability Value
- Retrieve Standing Instructions
- Retrieve Summary Query Resolution Status
- Retrieve Transaction History
- Review Liability Mix
- Schedule Access Item Access Code Issuance
- Schedule Access Item Expiry
- Schedule Access Item Reissuance
- Schedule Arrangement Review
- Schedule Communication Response Status Review
- Schedule Financial Txn Card Code Issuance
- Schedule Liability Mix Review
- Schedule Liquidity Review
- Send Communication
- Terminate Payment
- Verify Communication
- Verify Inpayment
- Verify Outpayment
- Verify Transfer Instruction
IFW Models Provide Link Between CBM and SOA Software

IFW provides the analysis and design constructs that link a high level CBM scope to the components of a service architecture for a financial institution.
IBM Payments Framework for Financial Services

**Industry Models & Design**
- Data Models
- Process Models
- Service Models

**Payments Value Plays**
- SEPA & SDD
- SWIFT Modernization
- Payments Bus Integration
- Investment Areas: Corporate, Check21, Mobile and ACI Renovation support

**Partner Content**
- Dovetail
- INTERCOPE
- SWIFT
- FUNtech
- ACI
- Systar

**Payments Components and SOA Foundation**

**IBM Software linked to Payments Framework**
- Rational Software Architect
- Tivoli Federated Identity Manager, ITCAM for SOA
- DB2 pureXML

**Models, Assets, Services**
- Component Business Model (CBM)
- EPP Tools and Models
- IFW & BDW
- Payments data models {UNIFI (ISO20022), NACHA, FIXML, FpML, TWIST, BOJNet}
- 'it Solutions Payments Suite (GBS)

**IBM payments software**
- WBI for Financial Networks, WTX
- Tivoli Federated Identity Mgr, ITCAM for SOA
- Rational Software Architect
- WebSphere Banking Payments Pack
- IBM Payments Director
The IBM WebSphere Banking Payments Bank defines interfaces to fine-grained services to speed development of payments-oriented SOA application components.

- Pre-built industry SOA accelerators
- Based on industry & technical standards
- Speeds time to market
- Extensible and configurable
- Increases reuse of payments services
IBM WebSphere Banking Payments Pack
*Speeds the Creation of SOA Payments Services and Applications*

- Provides a governing architecture and a collection of pre-built SOA assets specific to payments domain
  - WBS Fabric bundle (includes WID & WPS) is the pre-requisite

- Jumpstarts delivery of composite business applications across payments business processes
  - Not a pre-built payments application that is ready to be deployed

- Assets primarily derived from subsets of industry standards like ISO 20022, SWIFT, SEPA, NACHA, IFW and industry best practices
  - Does not define its’ own unique standards

- Focused subject areas
  - Payments Initiation, Payments Clearing & Settlement, Payment Transactions (Vendor, Investment, Lending, Payroll, Trust)

- Extensible and configurable to support unique client needs
Use of Payments Standards in Banking Payments Content Pack

- **Source: ISO 20022 Standards (also support SWIFT)**
  - ISO 20022 Process Models are used to define Payments Business Process Maps.
  - ISO 20022 UML Models are used to derive Payments Business Object Model.
  - ISO 20022 Dictionary is used to create a Payments Business Glossary.
  - ISO 20022 Messaging Model is used to create common services like ISO 20022 Validation Service, ISO 20022 Debulking Service etc.

- **Source: SEPA Standards**
  - SEPA Messaging Model is used to create a Payments Business Glossary.
  - SEPA Messaging Model is used to create common services like NACHA Validation Service.

- **Source: IFW Models**
  - A subset of IFW Interface Design Model (IDM) is used to derive payments-specific Payments Service Interfaces.
  - Payments-specific business terms from IFW Business Object Model (BOM) are used to create Payments Business Glossary.

- **Source: NACHA Standards**
  - NACHA EDI to create a Payments Business Glossary.
  - NACHA EDI Model to create common services like NACHA Validation Service.
The IBM SOA Payments Framework for Financial Services

WebSphere TX

UI for Monitoring & Management

Business State Engine For WPS & WMB

Process Models Services Templates

Transformation State/Event Data

Standardized Message Model (ISF)

Gateway Services

ISV Applications and Components

Application Services

WebSphere Partner Gateway; WBI-FN; PM4Data, ISVs and more

Transformations for SEPA, FIX, NACHA and any-to-any

Gateways for SWIFT, EDI, File Transfer, and More
Performance and Availability are Required for Payment Systems

*Find Payments in Business Terms and Monitor the SOA Foundation*

- **Business analysts** want to monitor payment processes to spot bottlenecks, status, and inefficiencies.
- **Administrators** want to monitor CPU utilization, memory usage, disk and database table-space usage.
- **Payments systems analysts** want to understand the payment functions, transactions, and the response times of individual messages.
- **Architects** want to analyze payment service relationships between requests and the SOA Foundation.

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**IBM SOA Foundation**

- **Business State Engine** for WPS & WMB
- **Process Models Services Templates**
- **Standardized Message Model (ISF)**
- **Transformation State/Event Data**
- **ISV Applications and Components**
- **Application Services**
- **Gateway Services**

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**Tivoli software**
Payments - Problem and Impact Questioning

**Typical LOB Problem Questions**
- Can you personalize your customer’s payment process based on preferences or policies?
- Are you able to support the complex mix of payment products that your customers are asking for?
- How long does it take to support a new payment product request from a customer?

**LOB Impact if Not Solved**
- Company will lose sales to banks who can support the customer’s complex payments needs.
- Banks will lose payment market share to those banks than can innovate faster than their competitors.
- Company will not be perceived as a market leader

**Typical IT Problem Questions**
- Can your IT systems adapt to the complex, changing payments needs of your customers?
- Are you realizing the high degree of Reuse across processes and services across business functions to simplify and reduce costs?
- How quickly and easily can you add new Channels, Geographies, Products to an existing business process?

**IT Impact if Not Solved**
- Inability to respond dynamically to business demands in a timely manner.
- Lack of reuse prohibits IT staff from achieving project deadlines.
- Rigidity in current systems limits IT’s ability to support the launch of new payment channels and products.

**Typical LOB Impact Questions**
- Have you lost customers to competitors who have been able to offer payment products that you could not?
- Have you lost customers to competitors who have been able to offer payment products that you could not?

**Typical IT Impact Questions**
- What happens when IT cannot deliver on its business commitments to support a new customer?
- Where does the budget come from, what initiatives suffer, when there is overspending on project delivery?
In order to solve this problem financial institutions need:

- **An end-to-end BPM platform**
  - To improve efficiency and flexibility of payments processing

- **Comprehensive SOA-based process orchestration**
  - To improve existing manual and error prone payment processes

- **Flexible deployment of business services**
  - To make dynamic assembly of banking payments a reality

- **Business policy definition PLUS run-time enforcement**
  - To enable dynamic service assembly and service behavior adaptation based on business context of a claim

- **Ability to govern and manage business processes and associated business services**
  - To control the proliferation of processes and services reducing business model change costs
Solution → BPM with Business Services enables dynamic and adaptive business capabilities
Understanding the value of the IBM BPM solution:
How do most banks roll out payment process changes today?

“Need to present payment data in a specific format to meet special need.”

Answer: Embed role-based logic in Portal

“Network partner has changed hours of operation / fee schedule.”

Answer: New process created in BPM

“High $$ payments for non-preferred customers must be reviewed.”

Answer: Integration logic coded into ESB or services interface

“Need to present payment data in a specific format to meet special need.”

Answer: Embed role-based logic in Portal

“Network partner has changed hours of operation / fee schedule.”

Answer: New process created in BPM

“High $$ payments for non-preferred customers must be reviewed.”

Answer: Integration logic coded into ESB or services interface
Understanding the value of the IBM BPM solution:
How IBM BPM with Business Services improves the process?

The Smarter Approach:
• Business Policies
• Business Services

Payment Business Service

Role-Based
Users
Interaction Services

Partners
Customers

Operational Capabilities
Application Services

SWIFT Credit/Risk Mgt Fedwire ACH

Communication Channels Access Services

IVR Web Portal CRM

Support new customers/channels/infrastructure without having to write new payment processes.
Problem → No global bank today has one common infrastructure today to serve every market and customer.

How do you do that with fragmented, complex, inflexible & costly payment operations?
Payments - Problem and Impact Questioning

**Typical LOB Problem Questions**
- “How much is it currently costing you to manage and maintain your current payment systems?”

**LOB Impact if Not Solved**
- The bank cannot compete with universal/specialty players and gets swallowed by another bank.

**Typical LOB Impact Questions**
- “In the next five years, if your competitors dramatically improve their payment system cost structure and your bank does not, what is likely to happen to your bank?”

**Typical IT Problem Questions**
- “How many of your current payment applications duplicate function?”
- “How many different types of data formats do your payment systems support?”

**IT Impact if Not Solved**
- IT department cannot get the job done with their current budget and becomes a candidate for outsourcing.

**Typical IT Impact Questions**
- “What will happen to the IT department if you cannot get payment costs under control?”
Value of IBM SOA Connectivity to Payments Systems

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<th>Capability</th>
<th>Value to Retail Bank Payments</th>
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<tr>
<td>Enterprise Connectivity</td>
<td>Ensures a single architecture that can handle the multitude of data formats used in retail bank payments processing.</td>
</tr>
<tr>
<td>Regulatory Compliance</td>
<td>Ensures payments system access is secure, that unusual events are detected, and that the process is clearly auditable.</td>
</tr>
<tr>
<td>Operational Management</td>
<td>Ensures the payments systems stay up and running no matter what the volumes and that problems can be dealt with quickly.</td>
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IBM SOA Connectivity Solution (Capabilities)

**Enterprise Connectivity**

- Any-to-Any Connections
- Any-to-Any Transforms
- Pre-Built Financial Messaging Formats
- SOA Service Interface Enablement

**Regulatory Compliance**

- Federated Identity Management
- Complex Event Detection
- Logging and Tracking for Audit & Compliance

**Operational Management**

- Very High Performance & Scalability
- Assured Global Transactions
- 24/7 Availability
- Hot Deployment
- Performance Management
- zSeries Platform Exploitation
- End-to-End SOA Governance

*Drive Down the Cost of Payments Connectivity*
Additional IBM Value: Pre-built Formats for Payments Systems

- **IBM Information Framework (IFW) for Payments Processing**
  - Models exploit WebSphere Message Broker and WebSphere ESB/Process Server
    - Banking Data Warehouse Models
    - Payments Business Object Models
    - Payments Services Interface Design Models

- **WebSphere TX**
  - WebSphere TX Pack for Single Euro Payments Area (Europe)
  - WebSphere TX Pack for SWIFTNet FIN
  - WebSphere TX Pack for SWIFTNet Funds
  - WebSphere TX Pack for NACHA
  - WebSphere TX Pack for FIX (coming in April).
Payments Visibility – Problem & Impact Questions

**Typical LOB Problem Questions**
- Can you tell when, where and why payments get stalled in the process?
- How do you know if you are receiving a normal volume of per type, per channel, per client?
- Are you delivering maximum quality to your best customers?
- How do you know if you’re at risk of missing cut-offs?

**Typical IT Problem Questions**
- Can your infrastructure handle the increasing volumes of payments?
- Do you have a solution that easily facilitates monitoring external events from other applications and sources in one dashboard?
- What are your committed SLA’s and how do you measure them?

**LOB Impact if not Solved**
- Higher resource cost
- Millions of dollars in penalties, further eroding profitability
- Lost revenue to competitors with better insights on issues and up-sell strategies
- Churn on high-value customers?

**IT Impact if Not Solved**
- Increase in systems outages and your environment and system outages
- Inability to make changes quickly as requested by the business
- Lack of control on the integrated environment that impacts the successfully operations of payments

**Typical LOB Impact Questions**
- What impact have financial penalties had on your bottom-line in 2007?
- What is the financial impact if 5% of your customers defect do to poor handling of payments?
- What would be the impact if you could reduce handling of complex payments by 15 minutes a payment?

**Typical IT Impact Questions**
- How much of your budget spent trying to tie together incompatible tools for monitoring?
- How has the impact of missed SLA’s affected your ability to get additional funding from LOB?
Solution → Business Activity Monitoring for Payments Tracking

A cohesive view of the end-to-end payments process with personalized views

WebSphere Business Monitor
- Payment Status
- Payment Tracking
- High Value Exceptions
- Fraud Check
- ALM Check
- Liquidity Check
- Escalate Payments
- Alert Notification
- Payment KPI’s
- Balance Payment Batches

Specialized Alerts
Collaboration and Routing

Access to external application events and data sources
- Payment Origination
- Payment Settlement
- Liquidity Management
- Anti-Money Laundering
- Accounting
- Analytics, Customer History

VP of Payments → Payment Operator → Auditors
Business Unit Managers, External Resources
What is Certain about the Future of B2B Payments?

- Corporations are no longer resisting the move to B2B electronic payments, it just needs help getting there

- Checks will continue to be used until long after many of us retire but at a continuously declining rate

- Payments convergence is already reality and lines will continue to blur

- A growing percentage of B2B payments will involve cross border transactions

- Requirements and preferences will vary by industry vertical

- Businesses of all sizes will invest in technology for the purpose of improving efficiency throughout the entire payments process

- The demand for increased velocity of information, enhanced visibility and improved security and control will drive successful payment solutions development

Source: © 2007 The Tower Group, Inc.
The Payments Framework Facilitates STP to Corporates
Connectivity to Corporate Treasuries with EDI, EDI INT, and Other Standards

Management Tools
- Set-Up: Configure and test
- Deploy: Readiness assessment and on-boarding
- Manage: 24x7 monitoring and managing, Call center support
- Partner Enable: Infrastructure assessment, industry expertise, gateway deployment

IBM Software Group

Payments Renovations Supported Directly with DB2 pureXML

- **pureXML™ benefits – customer study**
  - Schema change: minutes vs. 1 week
  - Report: minutes vs. 1 day
  - Code savings: up to 65%

- **DB2 9 = hybrid DBMS server**
  - Tabular data, XML hierarchies
  - Standard query languages, APIs
  - Common services for
    - Optimization
    - Concurrency control
    - Transaction management
    - others
  - Free industry-specific software bundles
    - UNIFI (ISO20022)
    - FpML
    - FIXML
    - TWIST
    - and more!
Additional Value: IBM provides a Business Services for Payments: Banking Payments Content Pack

Accelerates delivery of composite business applications for payments

- Provides a governing architecture and a collection of pre-built SOA assets (accelerators) specific to payments domain
  - WBS Fabric bundle (includes WID & WPS) is the pre-requisite
- Jumpstarts delivery of composite business applications across payments business processes
  - Not a pre-built payments application that is ready to be deployed
- Assets primarily derived from subsets of industry standards like ISO 20022, SWIFT, SEPA, NACHA, IFW and industry best practices
  - Does not define its’ own unique standards
- Focused subject areas
  - Payments Initiation,
  - Payments Clearing & Settlement,
  - Payment Transactions (Vendor, Investment, Lending, Payroll, Trust)
- Extensible and configurable to support unique client needs
Wachovia – an SOA Infrastructure for Payments

Solution: Wachovia’s installation of our payments platform delivers:
- payment mediation, monitoring and management across its Treasury Services business
- a solution which supports industry open standards of abstracted functional services based on SOA
- a common definition of data, processes and services, allowing for phased- and component-based development while encouraging re-use and consistency across the enterprise.

Problem: Build an SOA infrastructure for handling payments, that would
- provide the basis for adding new payments services in the future – whether from third-party vendors or built in-house.
- eliminate duplication of service
- provide cost savings by clearing payments efficiently.

➢ Our payments solution has accelerated the Wachovia payments hub and greatly enhanced the level of monitoring. Back-end payment applications can now be shielded from changes that regularly take place at the payment network and gateway product levels. And the related modeling tools give business users complete visibility into the process.
Example: Growing the top line while increasing efficiency
Commerzbank AG

- **Business challenge:**
  - Business areas organized in silos with dedicated applications and long product introduction cycles

- **Objectives:**
  - Adopt a new component-based business model where some components can be handled by external partners
  - Move to this new model progressively to increase business flexibility with SOA
  - Create new services in a cost-effective way.
  - Implement processes across silos

- **Actions:**
  - The firm implemented a reliable message-based infrastructure to support faster speed to market
  - Currently implementing BPM with business services for even greater agility and time to market

- **Business Value:**
  - Enabled new service to internal and external clients for exchanging securities trading data and payments over SWIFTNet
  - More efficient, effective adoption of new, integrated business applications
  - Increased adaptability to new market requirements
Example: Reduced time to market

HypoVereinsbank AG

- **Business challenge:**
  - Corporates and Markets line of business is transitioning from a silo-based business model to a more flexible building block model to enable specialized operations centers and business partners to link to their services

- **Objectives:**
  - Establish componentized business functions to support the new business model
  - Improve its ability to respond to market opportunities and offer new services to its corporate clients to increase revenue
  - Link the trade clearing, Euronext and payment system environments seamlessly

- **Actions:**
  - Implemented an enterprise integration and connectivity backbone for the order and settlement processes for equity and derivative operations and SWIFTnet access
  - Now implementing BPM with Business Services to manage common processes with variability more efficiently

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**Outcomes**

- **Business Value:**
  - 35% reduction in time required to integrate new business services with internal and external business systems
  - Quick and easy connection of LOB business building block (trade clearing) to the Euronext stock exchange
  - Easier integration of trading floor systems via a new order routing and management system
  - More affordable implementation and operations plus improved ROI and time to market for new services
  - Easy reuse of common IT services to quickly adapt business processes to new market requirements
You are invited to

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Thank You
ISO 20022

- http://www.iso20022.org/index.cfm?item_id=43441
- ISO is a worldwide federation of National Standards Bodies. International Standard ISO 20022 – UNIversal Financial Industry message scheme (abbreviated to UNIFI) was prepared by Technical Committee ISO TC68 Financial Services.
- The UNIFI standard provides the financial industry with a common platform for the development of messages in a standardized XML syntax, using:
  - a modelling methodology (based on UML) to capture in a syntax-independent way financial business areas, business transactions and associated message flows;
  - a set of XML design rules to convert the messages described in UML into XML schemas.
- The business items used in financial communications, the resulting models and derived messages are stored on this website in a central Financial Repository.
- This flexible framework allows communities of users and message development organizations to define message sets according to an internationally agreed approach and to migrate to the use of common XML-based syntax.
- The UNIFI approval and registration process involves three kinds of registration bodies: the Registration Management Group (RMG), the Registration Authority (RA) and the Standards Evaluation Groups (SEGs). Should there be a need for additional messages, communities of users or development organizations can submit registration requests. The RA and SEGs work together to validate and process the registration requests under the supervision of the RMG. Complaints about the service level or decisions of the RA or SEGs can be submitted to the RMG.
Postive Pay

- **Positive pay.** This automated service is provided by banks. It is extremely effective when the entity sends specific information to the bank on days when warrants and checks are issued. The bank compares the documents that come in by number and amount to a file of documents issued by the entity. If the bank has no in-file match, it contacts the entity to determine the negotiable instrument’s authenticity. Two days are usually allowed for this process, but the process works better if the review is performed immediately. Counterfeit warrants and checks are then returned unpaid.
  - Positive pay allows an issuer and its bank to work together to detect cheque fraud by identifying items presented for payment that the issuer did not issue. Under positive pay, an issuer prepares a formatted-cheques-issued data file (including cheque number, amount and date, as well as other bank and account information) and transmits this data to its bank. Stop payments, voided cheques and manual cheques can also be included in the formatted-cheques-issued file. The bank compares cheques received for payment against the record of all issued cheques. The bank identifies items that do not match the issue amounts and cheque numbers. The bank may offer additional services to identify cheques that exceed certain dollar amounts and "stale" (dated) cheques. The bank presents the rejected items to the issuer for its consideration for payment.

- **Reverse positive pay.** This method allows the entity to conduct its own daily matching procedures. Most banks offer customers a daily transmission of paid items that can be compared with the entity’s issued warrant and check file. The entity must promptly research each suspicious document and advise the bank of items to be returned.
  - Reverse positive pay is similar to positive pay, but the process is reversed, with the issuer, not the bank, maintaining the list of cheques issued. When cheques are presented for payment the issuer’s bank prepares a file of the cheques, account numbers, serial numbers, and dollar amounts and sends the file to the issuer. The issuer then compares the information to its internal records. The bank is notified which cheques to pay or reject.
SWIFTNet

- Every financial institution requires the ability to exchange SWIFT messages as part of their international funds transfer activity. Such connectivity to the SWIFT network is often simply called a "SWIFT interface" although institutions of different sizes and IT-strategies demand different functionality from such an interface.

Smaller banks and institutions with an outsourcing strategy rely on service providers (SWIFT Service Bureau) and have therefore no internal systems for this task. On the other hand major financial institutions and large service providers have complex installations which implement standard SWIFT functions as well as satisfying the individual demands of specific organizations.

- In conjunction with the IBM payment platform INTERCOPE's BOX for SWIFTNet (BOX) provides a comprehensive solution to meet and exceed these demands. The IBM WebSphere Message Broker delivers a powerful routing infrastructure, the IBM WebSphere Business Integration for Financial Messages delivers state of the art CBT functionality and BOX covers all the application aspects of this scenario via its different components:
With the EPP product suite, IBM have provided a WebSphere Message Broker payments model based around the ISO 20022 Universal Financial Industry message along with a database schema for transaction tracking, an Internal Standard Format (ISF) for handling messages that transit the system and a user interface that allows administrators to see the completion of each phase of a transaction. Add to the underlying infrastructure components a methodology and Sample Payment Processes, and you can begin to see how EPP helps companies accelerate the development of payments application systems. Perhaps most interestingly, EPP has a built in orchestration tool that gives companies the benefits of Process Choreographer without having to install and manage WebSphere Process Server.

Add the strength of Process Choreographer to the stability and power of WebSphere Message Broker and, in my opinion, you have a powerful combination. It gets better though. EPP allows non-ISO 20022 standard transaction data to be incorporated into the ISF message model through the use of record addenda. This means that IBM's EPP solution does not require companies to change the way that they do business in order to use EPP. Instead, EPP can be dynamically modified to allow legacy applications to pass data in, and retrieve data from EPP without modification.
Enterprise Payment System

- One key strength of the EPP model is that messages from any source and format are transformed into ISF format records with the appropriate extras tagged on as soon as they begin to transit the infrastructure. These fiscal transactions can then be processed as required by multiple systems and then passed on to their ultimate destination. If the receiving application understands ISO-20022, then there is no further modification required, otherwise an exit transformation allows communication with any external system.

Response messages can be received and correlated in the EPP database with the outgoing transaction, and the results passed back to the originating system. Should a transaction fail, it can be re-driven from the database from the user interface provided.
About the NACHA standard

- NACHA is a national, not-for-profit organization that develops operating rules and business practices for electronic payments. The acronym itself is for the organization whose members define the rules covering the Automated Clearing House (ACH) network in the United States. The ACH Network is a nationwide electronic funds transfer system. It is a batch oriented store and forward system, where transactions received by financial institutions are stored and processed later in the day in a batch mode, rather than receiving and processing each payment individually.

- The Pack for NACHA is a WebSphere Transformation Extender-based technology that provides support for the exchange of ACH payments. The Pack for NACHA includes a WebSphere Transformation Extender type tree that complies with the ACH file, record and field level specifications and some example maps to help you use this type tree. It should be noted that the Pack for NACHA is designed to be integrated into larger solutions.
ACH

- **What is ACH?**
The Automated Clearing House (ACH) Network is a highly reliable and efficient nationwide batch-oriented electronic funds transfer system governed by the NACHA OPERATING RULES which provide for the interbank clearing of electronic payments for participating depository financial institutions. The Federal Reserve and Electronic Payments Network act as ACH Operators, central clearing facilities through which financial institutions transmit or receive ACH entries. ACH payments include:

- Direct Deposit of payroll, Social Security and other government benefits, and tax refunds;
- Direct Payment of consumer bills such as mortgages, loans, utility bills and insurance premiums;
- Business-to-business payments;
- E-checks;
- E-commerce payments;
- Federal, state and local tax payments.
IBM Information FrameWork, which provides the building blocks for a service-oriented architecture, is in use by over 250 global banks and represents over 200 cumulative years of development incorporating input from the world’s leading financial institutions.

Customers are using IBM IFW Service Models as part of their SOA strategy to integrate legacy applications and gain new functionality through a layer of consistent service definitions that can be deployed on IBM middleware or on other infrastructures.

IBM IFW Service Models are also being used as component blueprints for the development of new core applications such as policy administration systems and payment solutions.

IBM IFW Service Models provide a single, consistent and technology-independent view of the banking business. A set of templates, populated with banking-specific information, helps to convert technology components and data into generic objects that are commonly understood.

The models provide a starting point for both business and technology professionals to understand the requirements and architecture needed to re-engineer and update outmoded systems, typically with a service-oriented architecture. Effectively roll out new products and services.

- Integrate product lines and readily adopt new services with component-based modules.
- Integrate channels, so customers receive a consistent, accurate view of information—whether they walk into a branch, fax a request or bank online.
- Roll out new offerings such as kiosk and wireless services, leveraging existing infrastructure.
- Effectively integrate merged and acquired companies with the open and flexible architecture.