IBM Banking Process and Service Models
General Information Manual

Content

Executive Summary

Business Challenges

The pace of change in the financial services industry has accelerated markedly in recent years. Mergers and acquisitions, the introduction of channel architecture, the development of technologies such as internet banking and telephone banking, the introduction of insurance products into the branch network, and the shift in focus from transactional systems to customer facing systems (e.g. operational single view of customer) have all brought about extensive changes in the way financial services organizations operate. By necessity, stand-alone solutions have been developed, supported by an array of individual processes and procedures which often mimic and duplicate each other, but are sufficiently disparate to cause cost and training issues for the financial services organization, thus impairing the synergies and savings that would be available to a coherent, strategic organization.

Adding new regulatory components (e.g. Basel II Accord, Sarbanes-Oxley Act, Anit-Money Laundering, Know Your Customer, SEPA and MiFID) to this scenario compounds the change management issues, and makes it harder to accomplish business objectives within a reasonable timeframe and at a reasonable cost.

Finally, the information technology paradigm is ever present, pressing the organization into technology solutions that are often misaligned with overall objectives. They can be hastily put together without sufficient input from the business, and thus frequently disappointing in terms of value and functionality.

Is there a better way to achieve synergy among merged entities, deliver genuinely customer-serving processes, contain costs and employ technology in an effective and business-serving manner?

Clearly this is not an easy set of objectives to achieve, but those financial services organizations that have done so successfully have enjoyed significant growth in market share, increased profitability and higher return on investment for shareholders.

Successful Business Transformation with IFW Process Models

The secret to success is the adoption of a top down strategic approach to the transformation of the business that is not constrained by specific technology, particular products or channels or organizational structure.

Such a transformation would be a daunting task if undertaken against a blank canvas, and in reality would probably not succeed by virtue of the amount of management input needed and the overall elapsed time to achieve results.

The IFW Process Models are a content rich set of models designed specifically for financial services organizations. The models represent “leading practice”, and have been validated through use with many of the world’s leading financial services organizations over several years. They have been recently enhanced and extended so that the models are now aligned with the requirements for risk and compliance and STP payment solutions.

By using the models, the approach to transformation can be dramatically shortened, with consequent savings in time and money for the organization. Our customers report a saving of approximately 40% in the analysis and design stages of any business process re-engineering project by having access to process models. Customers also relate a 58% level of reuse in of IFW collateral when undertalking their process improvements.

By adopting the IFW Process Models, you will:-

- Increase customer satisfaction, grow the customer base and reduce the cost of selling and servicing that customer
- Identify opportunities to streamline processes, thus making service delivery cheaper and quicker

- Identify processes that essentially do the same thing and therefore should be amenable to rationalization. This reduces training and maintenance overheads, improves your cost-income ratio, and provides better, less costly service to your customers
- Be better able to ensure completeness in terms of regulatory compliance and risk management, potentially releasing capital to provide additional lending and investment capacity
- Reduce time to market for new products and services by exploiting existing processes and avoiding process redundancy
- Align your BPR efforts to strategic objectives to ensure that you are doing the right things for the right reasons
- Specify requirements clearly to technologists so that high quality solutions can be developed

The IFW Process Models can be used for a number of different initiatives:

Business Transformation (e.g. BPR for post merger/acquisition integration, process centralization and process outsourcing)
Regulatory Alignment (e.g. Basel II Accord, Sarbanes Oxley, SEPA and Reg NMS)
Process Automation (e.g. the creation of efficient STP payments or account opening processes amenable to automation)

Business Transformation

Financial services organizations need to re-engineer existing business processes on a continuing basis to meet a number of different objectives, some of which include:-

- To streamline and standardize processes following merger or acquisition
- To improve customer service for competitive advantage
- To reduce operational costs
- To meet the requirements of regulators
- To adapt to new trends in the market
- To exploit new products, channels or technology that become available

Re-engineering processes can be particularly challenging when undertaken in the absence of a reference model. Without a model as a reference, much time is often spent capturing the “as is” position, and it is often difficult to get agreement on quite ordinary processes and definitions such as “Product”, “Account” or even “Customer”. When the re-engineering effort is spread over different geographies, these issues become exacerbated.

The IFW Process Models facilitate process re-engineering by: -

- Providing well tried and tested standard definitions which are easily understood by business people and IT personnel
- Allowing the initiative to focus on the “to be” processes, saving time and effort
- Ensuring coverage based on years of accumulated in depth knowledge of how “best in class” financial organizations operate

Regulatory Alignment

By using the Process Models, you will be able to demonstrate that your processes not only help to manage risk wherever it may occur in the financial services organization, but you will also be able to demonstrate that you have modified and extended your processes for this purpose. This can be a significant factor in protecting your risk rating, or even improving it. In practice, use of the IFW model driven approach enables financial services organizations to define their target business processes for re-engineering and transformation in the area of risk and compliance.. The IFW Process Models, with a rich set of industry application processes, can be used as a key accelerator for a logical design in the building of new risk and compliance functionality.

The Bank for International Settlements' *Basel II Accord* lays challenges at the door of all financial organizations trading internationally. Processes will have to be modified to create division of duty and to identify where operational, market or credit risks may arise in the financial services organization together with steps to manage such risks. Furthermore, it will be necessary to demonstrate that these processes are in place and working in order to protect the financial services organization's risk rating with rating agencies and analysts. The IFW Process Models have been enhanced and extended to include process changes and new processes that will help to align your financial services organization with the needs of the Accord.

The *Sarbanes-Oxley Act* of 2002 (SOX) also has dramatic implications for CFOs and CEOs. It places the burden of accurate and complete financial reporting and disclosure squarely on their shoulders, with punitive penalties in the event of deliberate or possibly careless failures.. The tactical challenges of implementing SOX can include:

- Insufficient controls management. It requires that a company implement effective procedures related to the definition, documentation, testing, monitoring and enhancement of internal controls.
- Unclear assignment of duties. The new legislation introduces a host of additional responsibilities. Companies will need to know who is responsible for what in their organization.
- Outdated document management strategies. Companies might encounter obstacles if they attempt to meet Section 404 demands using their existing content and document management systems.
- Loose "off-the-ledger" audit trails. Any weak links in documentation, data consistency or other internal controls could result in unnecessary costs, frustration and errors in reporting.
- An inefficient IT infrastructure.
- A resistant corporate culture.

The motivations of *SEPA* are both political and economic. The single currency has greatly enhanced the need to standardize the area of payments and reduce the complexity and costs across domestic and cross border payments. It will address the needs of both electronic payments products and those of paper based products. SEPA will eliminate national barriers, foster greater competition, and exert downward pressures on revenues and costs. IFW supports financial institutions in achieving their strategic payment objectives by the adoption and leveraging of the best practices and open standards advocated by IBM's vision of SOA

The purpose of the *Markets in Financial Instruments Directive (MiFID)* is threefold:

- Protect investors
- Provide harmonization in the market across the member states.
- Make liquidity in the marketplace more transparent and accessible

The directive impacts the operational, compliance and supporting functions within a firm. It will lead to a EUR1 billion technology spend by capital markets participants but it will also create a EUR1.15 billion revenue-generating opportunity for the investment industry. It opens up the marketplace to Financial Institutions – once the financial institution is registered in one member state it will be automatically entitled to trade across all member states.

Process Automation

The creation of efficient, automated processes can have a significant affect on a number of key business objectives, such as-

- To improve customer service, reduce attrition and enable additional cross selling opportunities
- To reduce costs
- To improve time to market for new products
- To develop new channels

The IFW Process Models have been shown to be of benefit in each of these cases in many financial services organizations around the world. Customer service is improved by quicker reaction times and improved quality of response to queries and complaints, the provision of self-service facilities such as internet and telephone banking and by creating the perception of a "segment of one" service with profitable customers.

In terms of cost reduction, the IFW Process Models help by showing how to eliminate unnecessary steps in processes, and by showing where activities can take place in parallel rather than sequentially, with fewer touch points.

Time to market is improved by using the Models to identify where existing processes can be used to support new products and new channels. This technique also reduces the number of product-specific and channel-specific, but redundant, processes in use throughout the financial services organization, reducing training and maintenance costs across a wide area.

Example: Payments Processing

Faced with increasingly demanding customers and regulatory pressures, financial services organization are being driven to re-think their business strategy and operational plans towards payments. They are being challenged to maintain profitability in the face of increased competition. The need to increase operational efficiency and cut costs has never been greater. These challenges are focusing minds within financial services organizations to achieve seamless, end-to-end straight-through processing (STP) from customer initiation through to interaction with real-time gross settlement systems (RTGS), such as Fedwire or TARGET2, through to final notification of the involved parties, while simultaneously looking to integrate value added services.

Payment solution costs remain high due to the varied approach financial services organizations take to making, receiving and reconciling payments and the level of manual interventions in the end-to-end processing. If banks are to achieve maximum cost effectiveness and process efficiency and facilitate an enterprise-wide risk management approach, it is critical that they move towards a more homogeneous, standardized business modeling that enables the elimination of a product silo development approach and maximize re-use of processes across product lines.

Financial services organizations need to look away from processing payments in the traditional paper format and move towards implementing electronic STP solutions that result in cost reductions and can cater for higher volumes. An institution needs to take an integrated approach to payments to reduce cost and complexity. This is a further key to achieving competitive advantage.

In order to achieve the objective of increased automation, the IFW Process Models help identify the commonality of processing across the diverse payment systems, thereby understanding those common elements that can be re-engineered into non-interruptible automated processes from file receipt all the way through to reconciliation and customer communications. IFW forces financial services organizations to re-think their strategic vision and define payment solutions not in the standard product silo manner but commence to define commonality across products and systems rather in the current silo manner.

By using the IFW Process Models a financial services organization will benefit from a flexible payments framework that allows them to respond rapidly to market shifts, customer demands and regulatory requirements.

Example: Account Opening Processing

Similarly, account opening inefficiencies hamper efforts to attract customers and cut costs. Driven by customer expectations and competitive pressures from market leaders, financial services' companies are reassessing their delivery and customer management strategies. By eliminating inefficiencies, they are able to reduce costs and attract and retain customers. In particular, account opening processes represent a substantial opportunity to improve the productivity of a critical customer-facing process - while driving down costs.

IFW Account Opening Solution:

- Maximize the speed of account opening.
- Minimize operational costs by replacing paper-based manual processes with electronic forms that simplify data capture and eliminate keying errors
- Maximize responsiveness to customers and business productivity by leveraging a common content repository
- Manage risk and exposure to fraud by automating application processing and making the right credit offers to the right customers
- Optimize costs and performance throughout deployment and ongoing operations by modeling and monitoring account opening processe
- Help deliver real business value with an integrated solution that transforms the account opening process

Benefits of the IFW Process Models

- Reduced development time – 40% reduction for new solutions is typical
- Ready-made processes constructed with customer focus – no need to “reinvent the wheel”
- Control flow logic pre-analyzed – saves a lot of time in BPR projects
- Consistent activity naming standards – brings common understanding to business and technology people
- Parallel processing opportunities identified – reduces processing times
- Triggers identified – you can see what stimulus starts an activity or activity stream and what results are produced when an activity is completed
- Integration and consistency with all other IFW Models – your projects are extensible
- Extensive reusability of activities and processes – meaning less process maintenance and reduced training costs while enabling flexibility in the workforce
- Customizable generic templates – to meet your organization’s specific requirements
- Business requirements defined – in a cheaper, faster, easier and more complete manner
- Proven “leading practice” content – validated by world leading financial services organizations over many years
- Improved quality of developed components – on any technology platform
- Flexible implementation of process – with standards and variables applied to multiple implementation
- Package selection improved – better matched to your needs
- Results delivered – a predictable, less risky outcome

IFW Process Models - Overview

Introduction

Financial services organizations tend to manage the same functions and execute the same processes in a number of slightly different ways. If a financial services organization could employ pre-analyzed, well-engineered process templates for 80 % of their operations, then they may re-deploy 80 % of their analysis effort into customizing their processes with reusable building blocks, to create substantial competitive advantage.

The IFW Process Models contain information that is relevant in many organizational situations. The following is a summary of the people and groups who stand to benefit by using the models:

Those involved in **Process Definition** - the models can support analysis of the current “as is” and future “to be” processes by defining the logical activities, triggers and dependencies that comprise processes, and by specifying the business rules required to perform each activity. This information ensures an understanding of the complete business context (what, when, why and by whom) in which work is performed.

Those involved in **Information Technology** - the models can support the definition and analysis of information requirements for systems development. This information is essential to ensure that systems are aligned with business need, and that the necessary systems support and infrastructure are in place to enable the business to use applications effectively.

Those involved in **Change Management** - the models can support the analysis and definition of roles, skills and training required to implement new processes. This information enables an assessment of current processes, the design of future processes and the construction of a plan to transform that future vision into reality. The logical design of processes in the graphical form of process diagrams aids the presentation, discussion and agreement of ideas for change among business users, consultants, analysts, system designers and managers.

The IFW Process Model material is derived from many sources: -

- From IBM consultants who stay in close touch with the financial services industry, its organizations and associations
- From IBM’s industry specific consultancy practices
- Through the dedicated IBM Industry Models & Assets Lab
- Though working with international financial services organizations worldwide
- From the Bank for International Settlements (BIS) - for Basel II Accord material

IFW Process Model material is under constant review and is regularly tested and validated during client assignments. Enhancements and additions are made continually, and these are released via standard software release procedures to those clients who have maintenance arrangements in place.

An Overview of the IFW Process Models

There are three individual Models that make up the IFW Process Models. They are: -

- The Financial Services Business Process Model (FSBPM)
- The Financial Services Function Model (FSFM)
- The Financial Services Workflow Model (FSWM)

The following is a summary of the individual models, while detailed information on the models is contained in subsequent chapters.

The Financial Services Business Process Model - FSBPM

The Business Process Model contains as much as 80% of all processes undertaken by financial services organizations trading internationally. The business processes are broadly categorized into the following value chains, which represent processes that span many functions of the business:-

Sales & Relationship Management
Know Your Customer / Account Opening
Lending
Card Products Administration
Commercial / Syndicated Lending
Mortgages / MISMO
Savings, Investments & Deposits
Transfer Services
Payments / Direct Debits
Wealth Management
Product & Marketing Management
Regulatory Compliance
Best Execution / MiFID
Trade Processing
Corporate Actions
Asset & Liability Management
Human Resource Administration

This categorization is compatible with both the FSFM and the IFW Banking Data Warehouse (BDW), providing consistency that is propagated throughout the entire model set of the Information FrameWork (IFW). Each individual process represents a strand of work that the financial services organization must perform to be successful. The process content represents leading practice that has been validated by financial services organizations across the world over several years.

The five categories outlined above and are the highest level of abstraction and can be decomposed into processes and sub-processes, activities and triggers. Detailed descriptions of some of the processes contained in the model are given in later chapters of this publication.

The Financial Services Function Model – FSFM

The FSFM is a hierarchical set of pre-defined global business functions for the financial services industry. The key objective of the model is to align executive level goals and objectives together with the general policies and directives throughout the financial services organization, with the supporting information systems, applications and processes.

The FSFM is used to identify key areas that will benefit from re-development or business re-engineering. This is achieved by prioritizing functions for underlying process change, assessing the benefits and justification for change and reviewing all of this with the sponsoring executive or executive group.

Once the business strategy, organizational structure and processes have been aligned using the FSFM, the IT department can become involved to ensure that proposed solutions are equally well aligned.

The result of this cross-functional dialogue is that the eventual development of IT solutions meets the functional requirements determined by the business and is aligned with strategy so that it delivers sustainable value to the financial services organization.

The Financial Services Workflow Model – FSWM

IBM has been marketing the Financial Services Workflow Model (FSWM) as an important part of the Information FrameWork concepts. Leading financial services organizations worldwide have used these structures (together with other Information FrameWork Offerings) for the purpose of redesigning their business processes.

The FSWM comprises hierarchies of more than 700 Generic Activities, 125 Trigger Types and 120 Standard Verbs in easily referenced structures. They are used as naming standards with precise definitions and provide the building blocks, using common terminology, for enterprise-wide reuse.

To build complete processes from building block components and create effective, reusable process structures is not an easy task. Many financial services organizations who valued the IFW premise of enterprise-wide reusability asked IBM to pre-define and analyze the key business processes, so that they could speed their development efforts by refining and customizing a template rather than building processes from "scratch". IBM worked together with some world-class financial services organizations to define the set of reusable, enterprise-wide business processes. These business processes were developed to provide a generic level of processes that can be reused anywhere in the operation of a financial services company with customization for product, customer, application and organizational differences.

Considerable time can be saved in the definition and agreement of requirements, analysis and design, and in coordinating development efforts across various projects through the use of business processes. Another strength of the business processes is that they can be used for building a "learning organization" culture where the intellectual capital which belongs to each employee, gained through experience, education and talent, can be harvested using common terminology as a basic element of continuous improvement. The business process models can also be used to stimulate innovation, "break the mould" and create a new business paradigm, focusing on the customer.

Business Scope of the IFW Process Models

The Business Processes are closely aligned with the Financial Service Function Model (FSFM) and are grouped loosely into the five high-level classifications: Relationship Management, Account Origination & Administration , Risk & Compliance Management, Product & Marketing Management and Asset & Liability Management.

Relationship Management

The Relationship Management business processes directly affect customers of the financial services organization. The organization will need to manage Customer Relationships to find customers to whom products should be sold. This includes customer evaluation, query handling, personal selling, and special customer handling.

Account Origination & Administration

The Account Origination & Administration Business Processes directly affect the provision of services to those customers. The financial services organization will need to negotiate contracts with those specific customers identified, provide account administration services once the contract has been formulated and established, including continually answering queries of all types in a standard way, and provide channel servicing for product and service delivery.

Risk & Compliance Management

The Risk & Compliance Management business processes are a reflection of the new reality that financial organizations are being driven to re-think their business strategies and operational plans in the face of increasingly prescriptive risk and compliance regulatory requirements. The primary motivation for the multitude of risk and compliance initiatives is to enhance investor confidence and provide financial and ethical protection to the industry as a whole. IBM advocates an approach whereby senior managers understand, leverage and optimize the synergies that exists across the various regulatory

requirements. The Information Framework (IFW) can support financial organizations developing an integrated, strategic, enterprise-wide approach that results in increased internal controls and corporate governance, enhanced relationships with customers, improved decision making and at lower costs. The management of risk and compliance is now a key business driver and it traverses many regulatory issues and bodies such as Basel II, SOX, SEPA, OFAC.

Asset & Liability Management

The Asset & Liability Management business processes manage activities required to research various investment alternatives and assess the value of assets for the financial services organization or its customers, to take custody of assets and administer them for the benefit of a principal, and to balance the mix of assets held by the financial services organization, and to collect debts owed by customers. In addition, IFW defines business processes to manage activities required to obtain funds from depositors and other creditors and to determine the appropriate mix of funds that will balance the cost of obtaining funds with the return that can earned on those funds.

Product & Market Management

The Product & Market Management business processes reflect the fact that financial organizations are operating in a highly competitive global market place. In order to develop market offerings (including products, channels and market segments) which will give competitive advantage and bring those offerings to the market quickly, the financial services organization will need to identify gaps in the market place for which to analyze market opportunities and direct market communications.

IFW Process Models and other IBM Initiatives

IBM Master Data Management

IBM Master Data Management is SOA-based middleware designed to provide organizations the most flexible framework to support enterprise structured and unstructured data and business services, aligned with key business process. IBM brings together all the key core components required for a successful enterprise MDM strategy: information integration, content management, business intelligence, and master data management for specific data objects -- including product, customer, and supplier – and master data solutions for specific industries.

The IFW Process Models provide enterprise-wide, long-runing interruptable business process. These processes will determine the order in which supporting applications, including MDM components such as Websphere Customer Centre, are called, typically via services exposed with a services oriented architecture.

The IBM Component Business Model

The Component Business Model (CBM) is an organizing framework combining people, process and technology perspectives that drives substantial new insights and allows new methods of analysis for the organization. The CBM is a logical representation, or map, of a business that reveals its essential building blocks. A business component can be defined as the collection of the business activities it performs and its supporting people and systems requirements.

The Component Business Model can be populated with IFW content thereby transforming the CBM from components to solutions. The IFW provides proven, detailed banking model content that supports more than 80% of the high level function components listed in the CBM. CBM Business Components, representing functional areas of a business, are underpinned by a number of IFW Business Processes. Tasks and activities in the IFW processes that are candidates for automation are then defined in further detail in the IFW Integration Models.

IFW Process Models & Tooling

The challenges that enterprise wide integration projects present to financial services organizations can be best met by leveraging the capabilities of a wide range of tools, each with very specific capabilities. The preferences and skill sets of each analysis and design group that play a role in the project will also act as a pressure to adopt “role based” tooling that meets the needs of the individuals doing the work, as opposed to a “one size fits all” tool.

IFW, through the delivery mechanism of its repository can facilitate round-trip bridging of its process model intellectual capital from its repository to specific optimization environments, such as, Websphere Business Modeler. We maintain a flexibility to target other tooling environments as customer needs and changing landscapes dictate.

The Financial Services Business Process Model

Introduction

The Financial Services Business Process Model (BPM) is a set of the most important financial services processes, and is defined, as much as possible, to be independent of product, channel, organization structure or technology. The BPM contains over 420 enterprise-wide, generic processes and sub-processes made up of over 2750 activities and over 2640 triggers.

Business process engineering projects involve: -

- Defining the scope of the project by selecting business processes and making a working copy of the processes in scope.
- Customizing the model copy by firstly applying any re-engineering optimizations (incorporating best practice ideas, increasing parallel activities, removing unnecessary activities, etc.)
- Further customizing the models by making product and channel specific activity names explicit
- Adding organizational roles and responsibilities by introducing 'swim lanes' into the process
- Adding technology support and constraints by introducing data flows and system interactions

In this way, a generic process flow is made specific to a particular business situation. By starting with the same generic process flow specification wherever a specific process definition for that process is required, standardization and re-usability are maximized.

For projects involved in process simplification, achieving common processes across products and/or channels, harmonization of processes from merged organizations and so on, the steps outlined above would be preceded by identifying strategies whereby the differing process flows are selected according to how well they can be brought, as much as possible, into synchronization. Understanding the strategies to be achieved by an initiative is essential as a pre-requisite to scoping processes and prioritizing process customization.

Uses of the Business Process Model

Strategic Planning	The BPM provides an accessible model of successful financial services management processes, operations and their inter relationships. Use of BPM provides a framework for strategic planners to understand the financial services organization and the impacts of strategies in one area on another, to ensure that complete, consistent and integrated strategies are defined and that initiatives to implement them are effective.
Acquisitions and Mergers	The BPM provide a benchmark against which organizations can be compared. Once process similarities, differences and gaps are identified, the desired 'To Be' state and transition merged organizations can be effectively planned and implemented.
Organisation Structuring	The BPM with it's focus on flows and inter relationships provides a strong framework for understanding work content and interdepartmental dependencies and becomes a powerful analytical approach for structuring organizations to best enable process execution and delivery of required outcomes.
Competencies and Skills Identification	The BPM provides a sound framework against which to identify and define required enterprise competencies, as well as specific skills for the human resources of the financial services organization. Once specific structures have been defined, activities can be allocated to organization units and role skill requirements can be defined to execute those processes. Recruitment, selection, training and development needs can be more effectively identified in the process context.
Designing Delivery of Packaged financial services Products (Market Offerings)	Given that products can be thought of as sets of conditions for arrangements delivered by processes, the BPM provides a basis for quickly and effectively packaging conditions for delivery to the market by identifying and activating the relevant condition delivery processes.

Outsourcing the Business	Most traditional integrated financial services organizations view their organizations as centrally consolidated businesses. Together with analysis of the business environment, competition and market presence (current and future), the BPM can help to identify process components which can be separated from the total financial services 'value chain' to form viable economic businesses, and find unprofitable businesses which can be outsourced or eliminated.
Benchmarking and Managing Best Practice	The BPM can provide a common activity model against which an organization can measure and benchmark performance both within the financial services organization and with other companies to maintain best practice information. The BPM can be used to compare and improve similar processes across organization units, geographic areas and lines of business.
Costing and Management Accounting	Tailored for specific contexts, the BPM provides a process base on which to develop costing and management accounting systems. The activities are pre-identified for allocation, measurement and accumulation of data at the level appropriate to the management information requirement
Business Transformation, Re-engineering	Business transformation and business process reengineering involve the selection, analysis, design and implementation of business solutions addressing change requirements across all ten IFW dimensions: strategy, structure, skills, data, function, process, solution, application, network and system. Effective business engineering uses processes as the basis for design with reference to the other dimensions. The BPM provides the basic process logic from which to design future processes and identify specific change requirements more effectively and quickly.
Continuous Improvement	The BPM provides the basis for establishing performance measurement and enhancement initiatives. They can be used to develop a specific model against which process effectiveness (fitness for purpose), service level (responsiveness, service quality) and efficiency (input/output ratio) can be measured for process performance improvement.
Specifying Business Requirements to Technologists	Utilization of the BPM as the basis of business process requirements gathering and analysis across the ten IFW dimensions means that clear, well-defined technology functional requirements can be defined to meet business needs more completely and accurately.
Application Development and Integration	As a result of using BPM for business requirements specification, application developers can analyze, design, code, test and implement applications to improve business performance. The BPM is also very useful in identifying shared information flows between applications when integration is required.
Package Evaluation	Enhanced definition of business requirements through the use of the BPM enables application software selection decisions to be made with greater clarity and confidence. The features and constraints of off-the-shelf package solutions, associated communication and hardware are more readily identified if the full current and future business requirements are clearly defined.
Risk Management	The Risk Management set of BPM processes enable the identification of processes where risk may arise in the business, and activities to manage the risk, including internal and external reporting where required. Broad coverage of Credit Risk, Operational Risk and Capital Adequacy, including issues such as potential employee fraud, liquidity risk due to changes in market take-up or economic conditions, changes in counterparty risk, and the establishment of risk policy are all included in the enhanced BPM offering.

Benefits of the FSBPM

- Brings competitive advantage to the financial services organization by being able to process transaction more quickly and at less cost than its competitors
- Reduces time to market for new product introduction
- Assists in the improvement of customer service, encouraging retention and relationship development
- Provides a ready made set of business process definitions with a customer focus

- Includes extensive re-use of activities and processes which, if implemented, reduce system support and staff training requirements
- Encourages and promotes a common process language and understanding across disparate lines of business and organization units
- Eliminates redundancy in process variations
- Accelerates solution development, therefore reducing development cost
- Provides a framework into which new products and processes can be easily added

Examples of IFW Business Processes

The following pages give an example of 3 IFW Business Processes, including a description, definitition and graphical representation in Websphere Business Modeler.

- Administer Outpayment
- Provide Loan Arrangement/Account Offer
- Provide Operational Risk Capital Allocation

Adminster Outpayment

DEFINITION: To be in direct charge of or to steward the outpayment on behalf of an involved party.

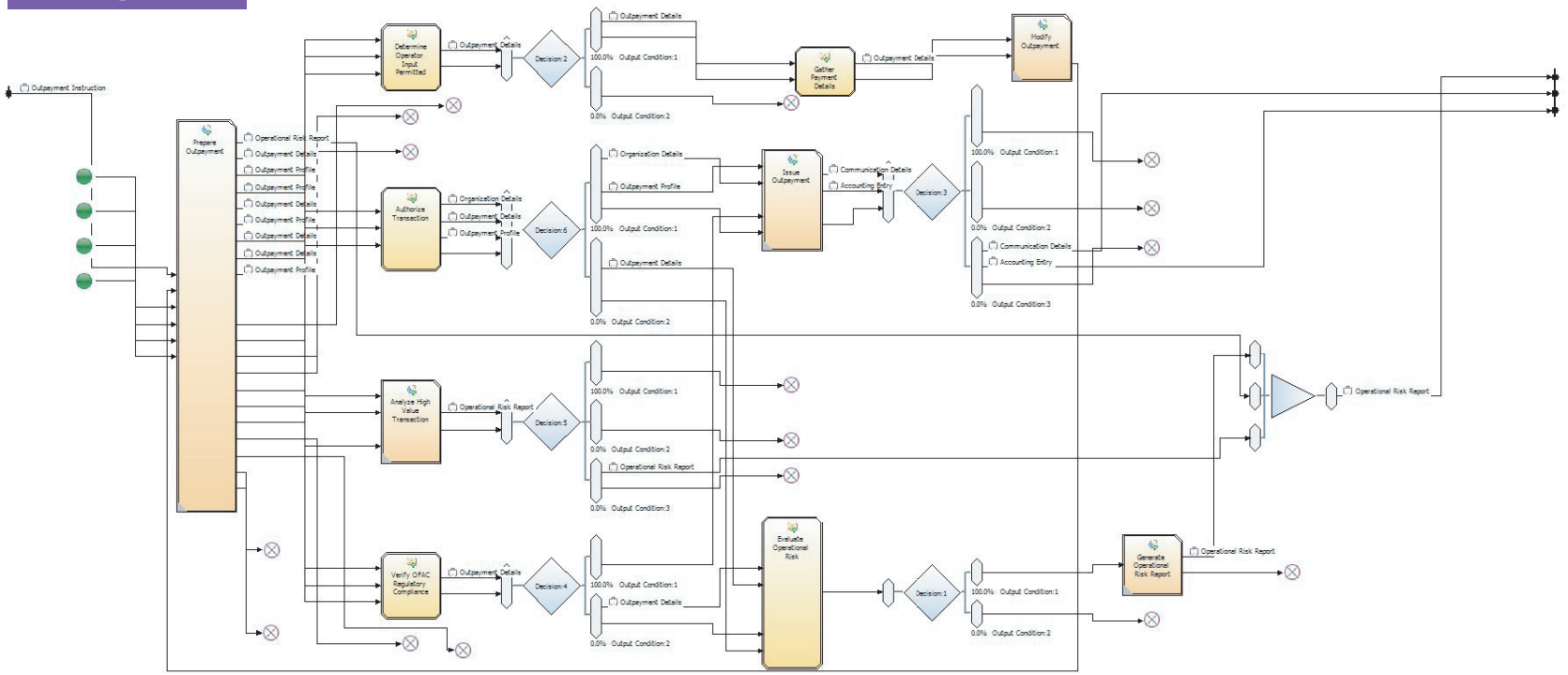
DESCRIPTION: This process encompasses activities necessary for the financial institution to process a request for outpayment and supply funds to a nominated beneficary or list of beneficiaries in a retail or wholesale (B2B, B2C) environment.

This process optimally facilitates a domestic or cross border payment using XML data transfers standards such as SWIFT (SWIFTNet Bulk Payments), Interactive Financial eXchange (IFX), Treasury workstation Integration Standards Team (TWIST), RosettaNet or Federal funds transfer system (Fedwire).

The motivation of corporates is to increase end-to-end Straight Through Processing (STP) rates of bulk payments. For example, SWIFT facilitates Bank-to-bank Bulk Credit Transfer XML message and Customer-to-bank Payment Initiation XML message. These allow the batching of an unlimited umber of payment instructions in an electronic file while leveraging the STP benefits of the MT103(+) and the technology benefits of the XML syntax.

The process includes the outpayment part of bill payment or where an outpayment is issued to an external supplier following an instruction received from a customer. This instruction can be received in person or in electronic (file) format. It also includes the issuing of guaranteed checks and official checks (i.e. Bank Drafts) in response to customer requests, where the funds for the official check are to come from a customer's business account.

WebSphere® software



Provide Loan Arrangement/Account Offer

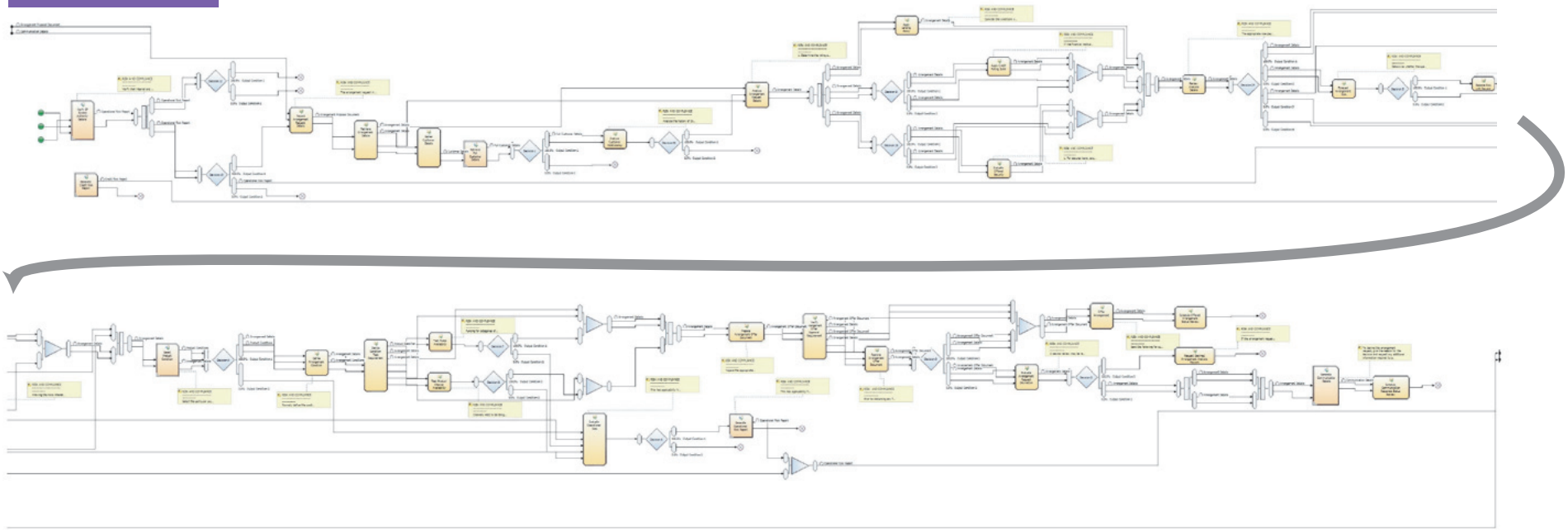
DEFINITION: To put a loan arrangement offer at the disposal of a customer; to supply a loan arrangement offer.

DESCRIPTION: This process encompasses the activities necessary for the financial institution to handle a request for a loan arrangement received from a customer (including any involved party relationship or potential customer) from the initial request (whether received in person, by mail, over the telephone, through a third party or sales agent), through to providing a response in the form of an arrangement offer (a tailored arrangement for the specific customer, the terms of which may be legally binding if accepted within a specific time period).

This workflow begins with the customer having a good idea of the type of arrangement required, based on product information previously received whether through enquiries, advertising, direct target marketing, and so on. It includes all the activities involved in negotiating the terms of the loan, including evaluating security, applying lending policy and rating scales, forecasting risk and pricing the loan to compensate for risk, making funds available for the future commitment and approving the loan at appropriate levels.

If an arrangement offer is not appropriate, the response to the loan arrangement request could be to generate a letter informing the requester that the Financial Institution is not prepared to make an offer under the terms that would satisfy the customer's stated requirements. If the arrangement is declined, then the analysis may be reworked and perhaps the detailed conditions ould be further negotiated with the customer. As a result of communication with the customer regarding the specific conditions of the arrangement (for example, pricing, changes in term, rates, required security, fees, and so on), amended arrangement request details would be recorded in the first activity of the workflow, to repeat the sequence of activities leading to approval of the arrangement offer. Any activities in which there are no changes in data are simply passed over to the next activity when the customer requests revised arrangement terms or when analysis rework is requested.

WebSphere® software



Provide Operational Risk Capital Allocation

DEFINITION: To put capital allocation at the disposal of, or to supply capital allocation to meet operational risk requirements.

DESCRIPTION: This process encompasses the activities necessary for the financial institution to provide sufficient capital to cover operational risk requirements. The financial institution retrieves the income statements for current and previous years, calculates the operational risk capital charge, allocates reserve funds and applies the accounting entry for the capital change. It also determines if a regulatory report is required and generates if necessary.

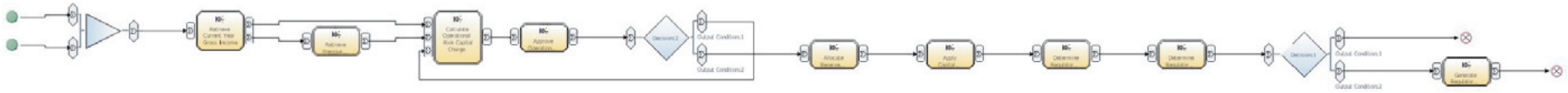
This process aligns with the requirements specified in Pillar 1 of the Basel II operational risk directives issued by the Bank of International Settlements (BIS).

(i) Basic Indicator Approach which specifies that a Financial Institution must hold capital equal to the average over the previous three years of a fixed percentage of positive annual gross income.

(ii) The Standardized Approach measures gross income across the suggested business lines and not across the whole Financial Institution. These suggested eight lines of business are corporate finance, trading and sales, retail banking, commercial banking, payment & settlement, agency services, asset management and retailed brokerage. In any given year, negative capital charges (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit.

(iii) The Alternative Standardized Approach which specifies that banks maintain equity capital sufficient to protect depositors from losses and support asset growth. The capital adequacy standard in the banking industry is risk based capital, which allocates capital requirements by a risk weighting formula. The risk-based capital standard establishes an average 8% capital-to-asset ratio.

WebSphere® software

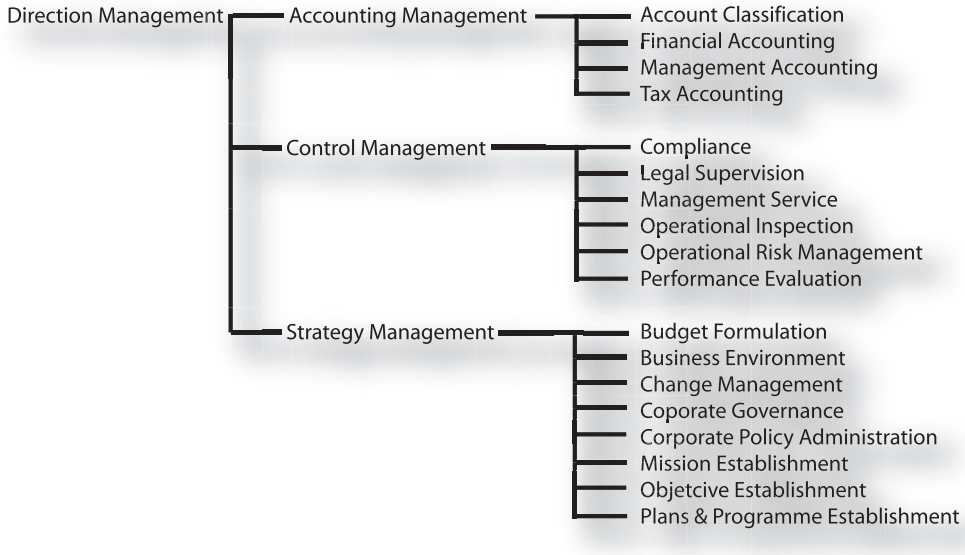


The Financial Services Function Model

Introduction

The purpose of the financial services Function Model (FSFM) is to provide a hierarchy of standard business functions or areas of responsibility that must be managed by a financial services organization. Functions in this hierarchy are 'normalized'. This means that each function is exclusive and does not include any aspects of other functions. The hierarchy is also designed to be complete. This means that the hierarchy covers ALL functions carried out by the financial services organization, regardless of who owns those functions or where they are performed.

Thus, the FSFM appears as a hierarchy of functions, where the 'leaves' of the hierarchy comprise the complete, non-overlapping list of functions required for the financial services organization to operate.



It is important to note that the functional hierarchy does not represent an organization chart; it is simply a structure used to understand and navigate to the 'leaf' functions.

The FSFM defines the terms that can be used, in a consistent, enterprise-wide manner to identify functions carried out by the financial services organization. It provides a very complete list of financial services functions and these functions are independent of organizational structure, location, product line, channel or any other business aspect. In total, the Model contains approximately 500 definitions of business management functions.

Uses of the Function Model

Scoping Business Issues	The FSFM allows rapid and complete scoping and comparison of the functional aspects of business issues or initiatives. By identifying which functions are involved in a particular issue, it is possible to quickly create a complete list of the business areas of responsibility that need to be considered in the initiative. If functions are similarly scoped for another issue, it is possible to compare and contrast the two issues using a common language and avoid duplication of effort in overlapping initiatives.

Determining Information Systems Suitability	For example, an issue may be a proposed new application system. Mapping the proposed new system against the function model helps us gain a clear and complete functional profile of the proposed application. If we have already mapped key organization units against the function model (in other words defining what functions are carried out by which organization units), then it is possible to compare the new application scope with the organization unit scope, giving us a clear picture of the impact of the new application on the various organization units.
Identifying Gaps	Similarly, if existing applications are mapped against the function model, then the functional overlap between these applications and the proposed one can be readily displayed and evaluated to avoid duplication in application development and facilitate reusable solutions.

A Powerful Business Tool

The FSFM is a vital tool in understanding the scope and impact of any new (or existing) business issue or initiative. Mergers and acquisition integration, organizational restructuring, new product and channel design, enterprise architecture design and application systems definition are but a few of the areas that gain great benefit from the financial services Function Model.

It is a valuable business and IT planning tool and should be used at the commencement of any new initiative.

Specific uses include: -

- Understanding the responsibilities of business units and the dependencies among them
- Integrating similar functions across business areas, supporting reusability of solutions
- Aligning business processes and organizational structure to strategy and prioritizing business requirements in functional terms
- Defining project scope clearly and avoiding duplication of effort with other projects
- Laying the foundation for the design of business processs and application services/components
- Ensuring the completeness of a services based architecture

Benefits

- Provides enterprise-wide definitions of business function, independent of organization structure or line of business
- Forms part of a common language between business and IT
- Provides a rapid and accurate scoping tool for new initiatives
- Provides a predefined, readily customizable description of financial services functions
- Helps to identify functional overlap
- Can be used to identify ownership of business issues
- Allows for the identification of processes that support individual functions
- Helps to identify duplicate functions in multiple business units

The Financial Services Workflow Model

Introduction

The purpose of the Financial Services Workflow Model (FSWM) is to provide a consistent, enterprise-wide vocabulary for identifying and naming processes, activities and triggers in a manner that is, as much as possible, independent of product, channel, organization structure or technology.

When stripped down to its simplest form, a business process comprises a series or network of activities, each of which are activated as a result of one or more events or triggers occurring within its environment.

When developing process architectures, the temptation is to immediately start defining the structure of key processes i.e. defining the interdependencies and sequences of flow within the process. However, it is extremely useful to have a set of pre-defined building blocks that identify the elements necessary to construct processes. The FSWM is concerned with identifying the elements of processes rather than defining their structure. It adds value in managing the basic process elements in a standard way to identify reusability.

Agreeing on a common lexicon

Having a predefined set of activity and trigger names and definitions means that business analysts on different projects can use the same standard wording in modeling processes and benefit from recognizing and reusing work from similar projects, thus speeding up the development process.

Generating Specific Process Activities within an enterprise-wide context

The activities and triggers within the FSWM are designed to be independent of product, channel, technology and organizational structure. When the financial services organization is designing a process for a specific product, channel, organizational structure or technology, appropriate FSWM activities and triggers are copied to the new process design then modified to reflect the specific requirements (specific product, channel etc) of the process at hand. A mapping is then maintained between the FSWM roots and the activities and triggers in the new processes.

Managing Enterprise-wide Processes

Mappings from the FSWM to specific activities within the financial services organization's processes provide a consistent, enterprise-wide index to processes. This reveals where similar processes are found in different parts of the enterprise. This encourages re-use, avoids redundancy and promotes business agility.

Constituent parts of the FSWM

Triggers

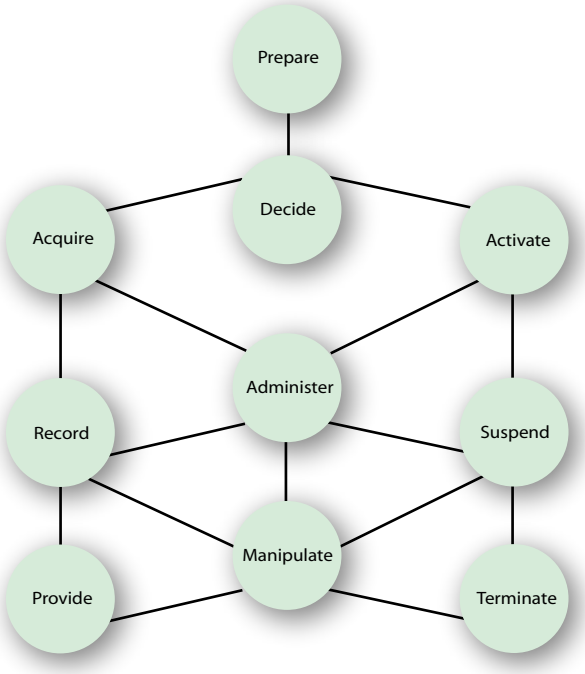
When the wide range of business triggers (also understood as stimuli or events) of interest to a financial services' organization are carefully analyzed, it is apparent that they each fall under one of six major classifications: -

- Communication Driven Triggers - relating to communications received or sent by the enterprise
- Condition Driven Triggers - relating to changes in conditions or parameters
- Decision Driven Triggers - relating to decisions made by the enterprise
- Incident Driven Triggers - relating to expected or unexpected incidents noted by the enterprise
- Opportunity Driven Triggers - relating to business opportunities arising
- Time Related Triggers - relating to time passing or instants in time

The FSWM provides 175 well-defined Trigger Types to prompt the analysis of process input and output stimuli when building or customizing business processes.

Preferred Verbs

In order to ensure that processes and activities are identified and named in a consistent manner across the enterprise and their level of re-use optimized, it is necessary to have an agreed vocabulary. Naming an activity involves a verb and a noun. An activity does something to something, e.g., 'Accept Customer'. The rich set of nouns requires a set of standardized verbs for use in the modeling process. The FSWM provides this verb set, classified by ten key, generic verbs expanded into over 100 specialized verbs and cover the complete life-cycle of actions needed to be performed on objects. These generic verbs are:



Activities

The combination of the Nouns and Preferred Verbs provides a comprehensive lexicon for naming activities in a consistent manner. Experience with this lexicon suggested that a 'starter set' of frequently occurring activities, with their definitions, is of significant value. Thus, IBM in conjunction with a number of major financial services organizations set about developing such a generic activity set. While doing so, it was noted that certain types of activity appeared many times, associated with different business concepts (nouns). For example, activities associated with 'details', 'quantities' or 'authorizations'.

In summary, the FSWM defines the terms that can be used in a consistent, enterprise-wide manner to identify activities and triggers that form the basis of processes of interest to the financial services organization.

Benefits

- Fast path to an enterprise process model, often required by regulators
- Consistent identification and naming of activities across the enterprise
- Minimized redundancy of analysis and implementation
- Greater consistency in process design
- Business requirements identified cheaper, better, faster

Other Important Principles of Construction

- Business processes may support many functions and one function may be supported by many business processes.
- Business processes should have a designated business owner

- Processes are implemented by teams of people, acting in different roles according to the skills profiles required to perform the constituent activities of each process
- Activities may be manual or automated and are performed by individuals, teams, application systems or automated routines, depending on how they are implemented
- Each activity requires data to perform the task, and a set of business rules controlling how to manipulate the data into meaningful information, how the information should be interpreted and what decisions should be made accordingly

Constructing Processes using the FSWM

Here are examples of who to build processes:

Payments

Administer (IFW VERB) Out-Payment
Prepare (IFW VERB) Out-Payment
Gather (IFW VERB) Customer Financial Details
Modify (IFW VERB) Out-Payment
Analyze (IFW VERB) High Value Transaction
Authorize (IFW VERB) Transaction
Issue (IFW VERB) Out-Payment
Evaluate (IFW Verb) Operational Risk
Generate (IFW VERB) Operational Risk Report

Integration issues are a major concern for banks. Existing infrastructure must be retained, yet in order to meet the demands of today's business issues, a consistent architecture is required that maximizes reuse and supports the development of new initiatives.

Services oriented architectures (SOA), as a basis for integration and as a means of structuring large-scale software architectures, are rapidly becoming the backbone of the modern bank. An SOA can increase the speed of business changes, improve business efficiency and performance, and protect the privacy and security of critical information assets. It enables IT to align more tightly with business strategies in a cost effective manner and in a secure and managed integration environment.

A key factor underpinning successful SOA is a common enterprise-wide description of the business concepts and processes that are of interest to a bank. Without this common language any attempt to support a consistent and flexible architecture will more than likely fail.

The IFW Service Models provide this common language. The models support a complete and unambiguous description of the business services required to support the bank. The IFW Service Models enable the efficient and accurate gathering of requirement and guarantees the consistency of definitions with a single integration effort or across multiple projects.

The IFW Service Models are tightly coupled with the IFW Process Models, describing the underlying services that support theses processes at runtime. Using the IFW Service Models, business concepts can be traced from analysis level through design level refinements to actual component and message definitions that provide a quick start for the specification of a common services bus within the organization.

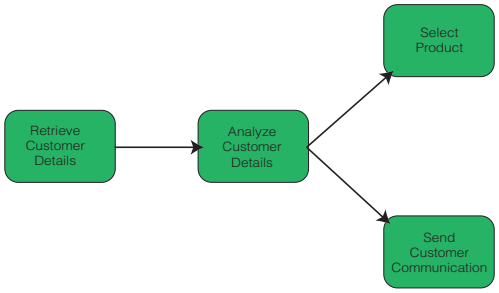
The Financial Services Business Object Model

The Financial Services Business Object Model (FS-BOM) provides business content and guidance for analysts and designers working in the context of creating a services oriented architecture and is used to clearly capture business requirements at a sufficiently detailed level. The FS-BOM is also designed so that these requirements are expressed in a manner that is valuable for systems development.

The analysis of the reusable elements that appear within business processes defined by the IFW Process Models will allow the identification of candidate business services that support those processes. For example, the business process for Account Opening will require the retrieval of "customer details". Other business processes, elsewhere in the bank, will have the same requirement. It is possible to identify a single solution that satisfies both these requirements and can be re-used across the bank. This solution is a business service.

The FS-BOM allows reusable elements within business processes to be explored further with the aim of identify actual business services. The FS-BOM is structured as:

- A set of use cases, which describe service candidates
- A model of business concepts, which are used by these use cases



An example business process

Use Cases

Reusable elements within business processes are analyzed further within the FS-BOM as use cases, which will aid the completion of requirements definition. These use cases are presented in two distinct ways:

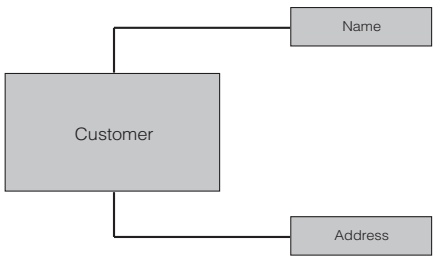
- A high level representation of the use case and the inputs and outputs of that use case as a whole.
- A decomposition of these high-level use cases into sequences of business activities, the interactions between these activities and key business concepts within the model.

An example use case

The IFW Process Models provide the context in which a requirement occurs while the use cases in FS-BOM describe the actual requirements.

Business Concepts

Part of describing a requirement in a use case is describing the business concepts, or classes, involved in that requirement. For example in the case of retrieving "customer details" it is important to be able to describe the customer details themselves and how they relate to other concepts in the model. The FS-BOM contains detailed UML models describing these classes.



An example class

For example, the class "Customer" defines the characteristics, responsibilities, and constraints that apply to every customer. Each class is composed of:

- **Attributes:** which describe a piece of information about the class. For example, the attribute dateOfBirth defined as part of Customer provides details on the customer date of birth. Using attributes, the business modeler can capture specific characteristics of any business concept.

- **Operations:** which describe an action that can be performed on a class. For example, the operation getName, defined as part of Customer, will retrieve the name of that customer, or perhaps a specific type of name depending on the requirements.
- **Associations:** which describe a relationship between two classes. For example, a Customer having an Address. Often these associations will support the operations of the model e.g. getCustomerAddress.

These classes modeled within the FS-BOM are grouped into packages, which represent specific business areas, supporting a wide scope of over 360 business level use cases. Packages allow:

- Clear separation of business concepts/classes
- Enhanced model readability
- Easier manipulation of the model, as each package can be controlled independently

The use cases and business concept (class) definitions work together to fully describe the business requirements and rules of a bank with the aim of providing the information necessary to modelers designing a services oriented architecture.

Uses of the FS-BOM

- Capture more detailed requirements of particular business activities
- Enforce consistency in captured requirements
- Identify where there are candidate services for a services oriented architecture
- Provide a point at which all business requirements should be definitively captured

Benefits of the FS-BOM

- Express requirements in a very structured way.
- Designed to be understood by both business an IT and acts as a communication bridge between the communities.
- Provides an environment in which reuse possibilities can be identified and verified
- Provides a firm basis on which integration or services oriented architecture solutions can be built
- Enables consistency of definitions
- Provides a ready built model so you can focus on business issues rather than building a model from scratch

The Financial Services Interface Design Model

The Financial Services Interface Design Model (FS-IDM) takes the analysis level use cases and concepts identified within FS-BOM, and allows the bank to specify a services oriented architecture that meets these requirements. This task is normally performed by a technical team within the bank who make design level decisions based on concerns such as the technology environment. This team is working from a stable model of business requirements (FS-BOM) which eliminates the need for repeated specification of requirements. This greatly increases the applicability of technical solutions and reduces the time taken to specify them. The FS-IDM was developed to:

- Assist modelers in designing reusable services that meet the banks stated requirements,
- Define business components that support these services
- Define standard interface definitions that describe the communication between software systems in the bank

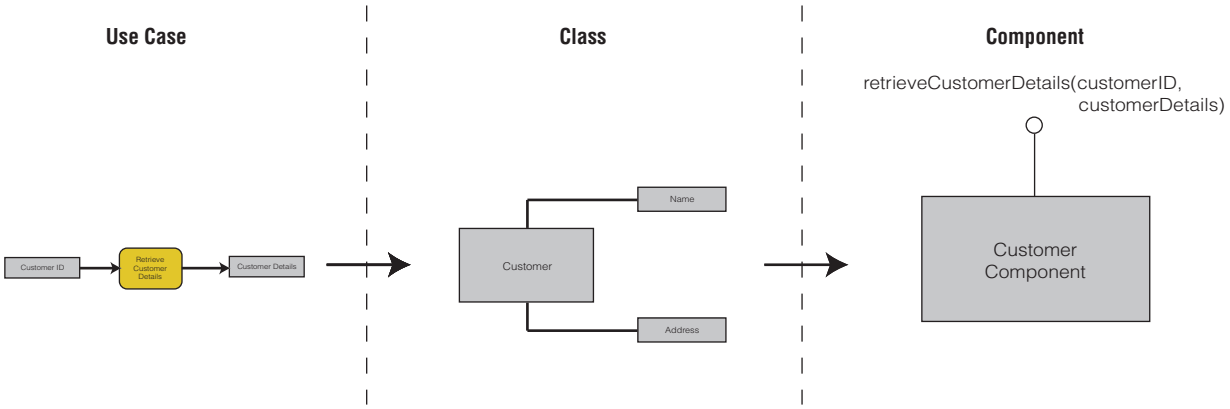
Business Service Groupings

The FS-IDM is structured as a component model, describing units of software which satisfy specific business requirements. The actual requirements which are supported by a component are described as interfaces, which group related services. The internals of a component within FS-IDM are derived from the class models of the FS-BOM, providing the detailed class definitions and relationships which describes how the component operates.The interfaces of these components are derived

from the use cases of the FS-BOM, describing the capabilities of these components and how they interact.

The components of the FS-IDM are designed to meet specific business needs, for example:

Arrangement Account Administration	Liability Management
Arrangement Management	Liquidity Management
Asset Management	Market Management
Capital Management	Product Development
Channel Management	Product Distribution
Collateral Management	Profit and Loss Management
Communication Management	Relationship Monitoring
Financial Market Offering Management	Risk Management
Financial Transaction Card Access	Special Customer Assistance
Financial Transaction Processing	Human Resource Management
Infrastructure Management	Arrangement Negotiation
Involved Party Evaluation	Arrangement Reporting
Involved Party Management	



Defining FS-IDM services based on FS-BOM use cases

Business Service Interactions

In a similar way that the FS-BOM describes the sequence of business activities within a use case, the FS-IDM describes the collaboration between services to meet a business goal. For example the retrieveCustomerDetails service may call other finer-grained services to perform the required task. e.g. getCustomerName and getCustomerAddress.

Collaborations between services are essential to a successful SOA as they prevent the definition of monolithic services that would be less reusable across multiple projects.

Uses of the FS-IDM

- Assists in the design for a services oriented architecture
- Provides component definitions for software development
- Provides messages definitions for integration development

Benefits of the FS-IDM

- Allows you to construct services within a formalized model
- Provides traceability back to business requirements
- Structured to maximize reuse of business services

- Enables consistency of definitions
- Provides a ready built model so you can focus on business issues rather than building a model from scratch

Deploying the IFW Service Models

The FS-IDM remains a technology independent view of an SOA and requires transformation into the specifics of a given technology, for example Web Services or XML messaging. However, some of this translation can be done automatically through the use of the IFW Service Model Generators, producing stubs and templates for use in an implementation environment.

For more information:

IBM Industry Models & Assets Software Group

Email: fssc@ie.ibm.com

The IBM home page can be found at **ibm.com**

IFW0004-MK