

Financial Products Markup Language

introduction to FpML

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Abstract:

Originally released by J.P. Morgan & Co. Incorporated and PricewaterhouseCoopers LLP, now guided by an organization of key derivatives industry participants, FpML(tm) (Financial Products Markup Language) is a new protocol for Internet-based electronic dealing and information sharing of financial derivatives, initially handling interest rate and foreign exchange products. This presentation reviews the history of FpML; discusses the process of creating a new standard, lessons learned, success factors and the differences between dot com and dot org; and explores how changes in technology will create eService opportunities for derivatives processing in the wholesale capital markets.

Introduction to FpML

The FpML vision

The major components of the FpML vision include:

- Enable e-commerce for financial derivatives

- Create a “lingua franca” for communicating in the derivatives domain

- Driven by the financial industry

- Build critical mass of financial institutions and vendors

FpML business goals

- Enable electronic communication between firms

 - Confirms, Trading, Pricing

- Facilitate inter-system communication within an organization

 - Front office ⇒ Mid office ⇒ Back office

 - Facilitate STP for derivatives

- Enable new internet-based business opportunities

 - Market and credit risk management

 - Automated trade confirmation

What is FpML?

Standard for Internet -based dealing and processing of financial instruments

Initially focuses on Interest Rate and Foreign Exchange derivatives

Open Standard based on the XML (eXtensible Markup Language) from the W3C (World Wide Web Consortium) .

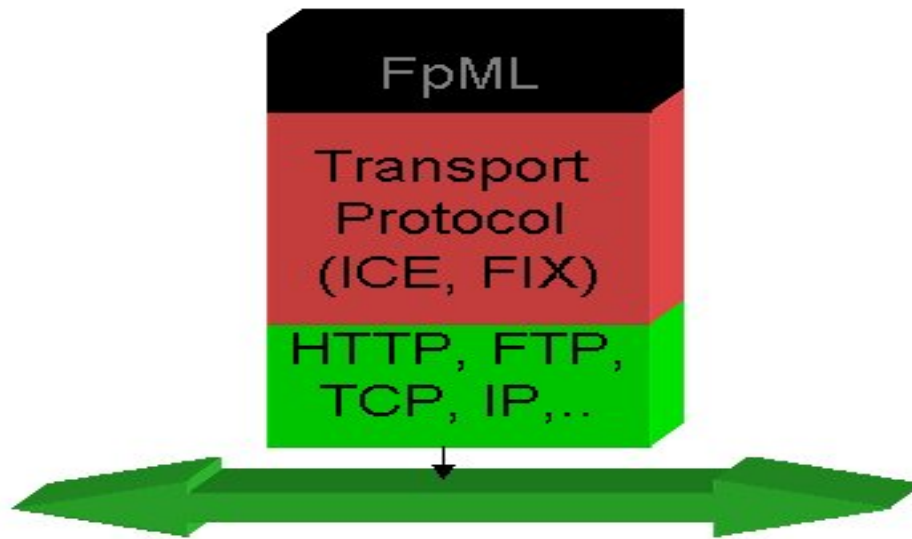


Figure 1. FpML exists in the context of other protocols

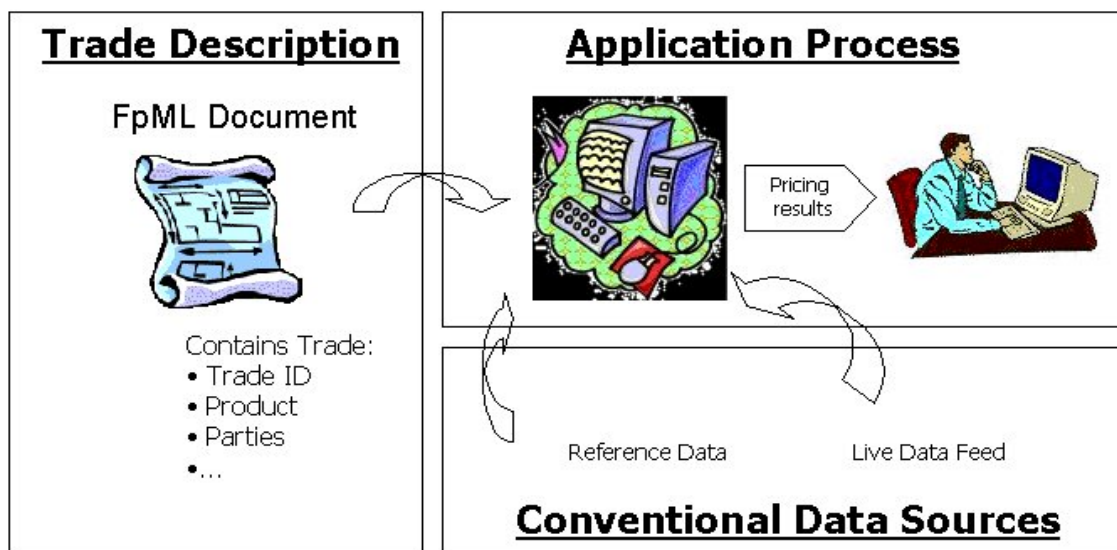


Figure 2. FpML currently describes the trade

FpML Reuses General Trade Components

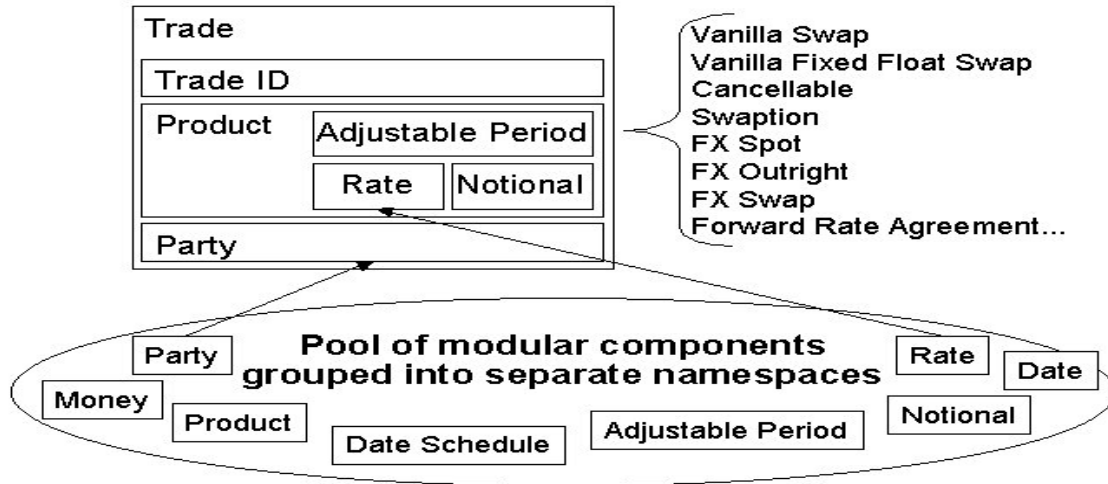


Figure 3. FpML reuses general trade components

Extensible component model

Ability to add new Views

Pricing view, risk management view

Ability to add new Core Components

Can add pricing information for FX products

Ability to reuse General Components

Represent new products reusing existing components

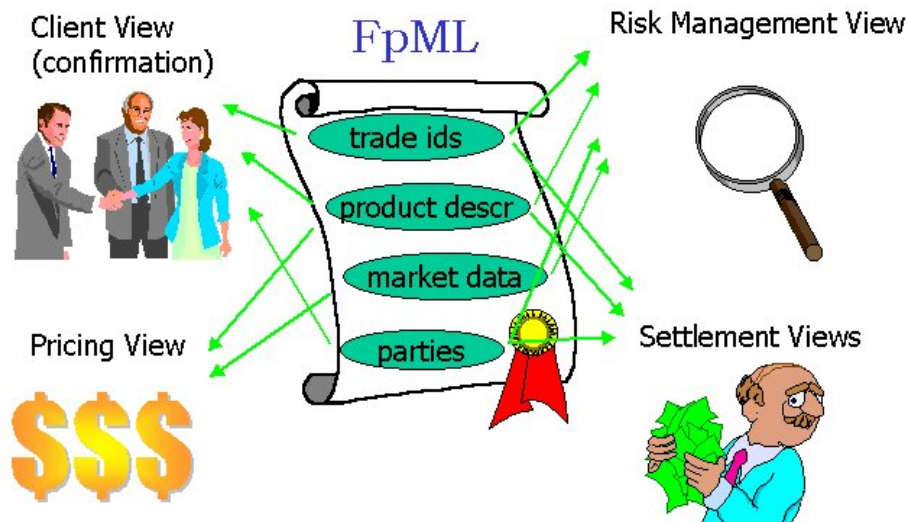


Figure 4. FpML Views (conceptual)

Business benefits

Reduces processing cost

- Lower communication costs between apps

- Lower system implementation costs

Decreases operational risk

Increases business opportunities

Enables end-to-end processing

- Allows adding proprietary data for internal processing

Time line

1998 - JPM starts prototyping with XML

Spring 1999 - JPM and PwC begin collaborating

June 1999 - JPM and PwC announce standard

Aug 1999 - Draft is released

July - Sept - Technical meetings, discussions

Oct. '99 - Steering Committee formed (met Nov '99)

Dec. '99 - Standards Committee starts meeting

Jan. '00 - Product and Architecture WGs formed

Steering committee

Consists of senior derivatives business leaders from major market participants

Sets overall priorities and direction

Currently consists of representatives from:

- Bank of America, Chase, Deutsche Bank, Fuji Capital, J.P. Morgan, Morgan Stanley, Paribas, UBS / Warburg Dillon Read, PricewaterhouseCoopers (advisor)

Standards committee

Consists of derivatives technology and middle office leaders (MDs and VPs) from major market participants, and representatives from key vendors

Defines approach for developing the standard, monitors progress, and officially approves the result

Currently consists of representatives from:

- All Steering Committee member firms

- CSFB, Citibank

- IBM, Infinity (Sungard), ISDA, PricewaterhouseCoopers, Reuters, S.W.I.F.T

Current focus

Q1 deliverable

Steering Committee set Q1 2000 goal for an approved version of FpML for a subset of the vision

Focus on matching of interest rate derivatives to achieve post-trade confirmation

Initial priority on basic products (FRAs, vanilla swaps, caps/floors, swaptions)

Steering committee is considering related issues, including legal issues, FpML governance, etc.

Standards committee

Standards Committee meeting monthly

Scoping products based on SWIFT MT340 and MT360 messages (\Rightarrow no swaptions in Q1 deliverable)

Defining approval process

Two working groups established (products, architecture)

Developing prototyping plans

a non-robust interchange of FpML soon after Q1 deliverable

Product working group

Compared FpML to SWIFT message formats

Identified issues/inconsistencies

Reviewing feedback from early prototyping efforts

Developing consistent definitions for vanilla swaps, FRAs

Architecture working group

Review/agree on XML conventions, syntax

Agree on which versions of XML standards to follow

Address versioning

Address referencing

Consider equivalence

FpML milestones and achievements

January 2000, Risk Magazine - FpML is selected as the most significant technological development in 1999 for the derivatives industry.

PricewaterhouseCoopers selects FpML as winner of its global Innovation Award for Client Service.

Next steps

Develop the deployment strategy

How to exchange the FpML? Will the business process change?

Raise awareness in firms outside of the process

Public Communications

Consider impact on business processes, legalities, etc.

Other products? (semi-exotics, credit and equity derivatives?)

XML in the Capital Markets

J.P. Morgan - Cygnifi.com

ASP for pricing, valuation and risk management

PricewaterhouseCoopers - Datatopia™

Full service provider for B2B middleware

Integral Development - CFOWeb.com

Internet portal site for CFOs, fund managers, and corporate treasury operations

Centerprise Services

ASP for Straight Through Processing (GSTPA)

J.P. Morgan - Cygnifi.com

Business concept

J.P. Morgan is a first tier investment bank. While virtual exchanges can facilitate efficient pricing, they cannot assume the counterparty credit risk in a derivative transaction. J.P. Morgan can quantify and package the risk in a transaction.

Use FpML to automate risk management technology, and distribute those services over the web.

Mission statement

Cygnifi Advice-on-Demand will provide professional, expert advice in the domains of market risk, credit risk, and collateral management.

These services use the underlying application infrastructure together with independent data and business expertise to deliver valuable analytical business advice to clients.

Value proposition

The web-based provision of risk management services from a centralized infrastructure will allow cost-effective risk management services to be offered to a wide range of clients who currently do not have access to this functionality due to the high cost of internal or packaged systems.

Services and features

Cygnifi ASP (Application Service Provider) will include pricing, valuation, market and credit risk management, and collateral management functionality.

Central customer support teams of high-caliber professionals with leading-edge skills in portfolio valuation, counterparty credit and collateral will be an important element in the provision of these services.

Counterparty Exposure And Credit Risk Services

- Counterparty exposure calculations based on Monte Carlo simulations.

- Dynamic counterparty exposure analysis based on sensitivities to market parameters.

- Impact of credit enhancements on counterparty exposure provided through collateral.

Portfolio Valuation And Market Risk Services

- Independent appraisal service

- "What if" scenarios and stress testing

Collateral Management Services

- CSAs and other types of collateral agreements on-line

- Daily or as needed computation of collateral requirements

- Advice on legal risks associated with collateral and netting enforceability around the world

PwC Universal Data Interface

Business concept

PricewaterhouseCoopers has developed real time XML based middleware technology (1993-2000).

Only the largest companies can amortize the cost of middleware implementation and ownership.

Connectivity is an expectation and a barrier, it does not increase valuation.

Outsource B2B middleware infrastructure soup to nuts!

Datatopia™ - a happy place for your data!

Mission statement

Combine high performance middleware, systems integration and operational support to allow B2B providers to outsource connectivity.

Provide seamless connectivity between files, databases and wire devices (TCP/IP, MQ Series, COM, TIBCO).

Understand industry specific application requirements.

Handle institutional volumes and complexity.

Value proposition

Why buy when you can lease?

Buying a Service vs. “Coconuts and String”
Similar to the phone company

Outsourcing B2B Provider-to-Client Connection

Decrease Time to Market
Reduce TCO (Total Cost of Ownership)
Minimize Operational Risk

Services and features

One Stop Shopping for B2B Connectivity

Data Analysis and Specification
Software Licenses and Maintenance
Middleware Implementation
Production Support and Operations

Full Service Global Client Acquisition

On site systems analysis and integration
Improved customer relationship management

Superior Middleware Technology

XML Centric, not Buzz Word Compliant
Very High Volumes and Throughput
First Client Deployment in 1993
In Production at +12 Capital Markets FI's

Industry Specific Expertise

Capital Markets Middle Office and ERP Applications
Insurance Industry Sales Force Automation
Retail Banking and CRM Applications

Integral Development – CFOWeb

Business concept

Create a portal that brings together financial institutions, software vendors and corporate clients.

CFOWeb.com is the financial services industry's first full-service Internet portal site for CFOs, fund managers, and corporate treasury operations. It represents the first single-source location for independent third-party valuations, portfolio and risk management, and trading directly with providers.

Mission statement

Independent - not affiliated with or beholden to any financial institution or exchange.

Professional - managed by an experienced group of financial, business, and e-commerce professionals who put customer needs first.

Neutral - Provides an open and honest meeting place for market participants and does not take sides in any transaction.

Value proposition

Dependable - carefully screens financial providers to assure that they are of the highest caliber and reputation.

Efficient - uses the power of the Internet to achieve unprecedented access, ease of use, and economies of scale for both members and providers.

Secure - employs the latest Internet encryption and security technologies to ensure complete privacy and protection.

Services and features

Capture and Price Financial Trades

- Interest Rate Swaps

- Currency Swaps

- Interest Rate Caps/Floors

- Forward Rate Agreements

- Foreign Exchange (Spot, Fwd)

- Foreign Exchange Options

- Loans and Deposits

- Government Bonds (for portfolio/risk management only)

- Cash Instruments

Perform Portfolio Analysis

- Market-to-Market

- Cash Management

- Perform Risk Management

- Calculate Value-at-Risk

- Scenario Analyses

- Market Rate Sensitivity Analyses

Perform Back Office Operations

- Settlements

- Confirmations

- Payments

- Rate Resetting

- Event Diary Management

- Generate e-mail events for all processes

- Manage a calendar of operational events

Centerprise Services

Business concept

Redefine the mission of the capital markets institution by providing the first ASP for GSTPA (Global Straight Through Processing Architecture) .

Outsource the entire bank including front, middle and back office technology and operations.

Create a virtual infrastructure for the capital markets.

Mission statement

Centerprise is an application service provider (ASP) for capital market organizations.

The core business focus of Centerprise is to offer a set of on-line enterprise-wide management services targeted for the specialized needs of capital market institutions.

Value proposition

Virtual infrastructure for many of the daily enterprise-wide production and risk control functions that are currently being performed in-house.

Tighter control environment in which there is a more explicit linkage between senior management's objectives and the actual daily processes.

The product focus encompasses on-line enterprise-wide functionality with a strong risk control theme.

Services and features

Daily market and credit risk management

Trading P&L and financial reporting

Product and valuation control functions

Counterparty and relationship management

Key workflow processes linking policies, roles, and responsibilities with related process flows

Data Management Services

- Pricing and market rate data

- Time series management (for purposes like VaR)

- Reference data management for instruments

- Counterparties including credit and legal hierarchy

- Data scrubbing and hierarchy management

Technical assistance in setting up and maintaining your organizational and HR data, calculation configurations

Detailed risk classification schemes, instrument type hierarchies, risk factor to market factor mapping, limit types, stress scenarios, policies and procedures based on best practices and related workflow templates.

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Adam Greissman - Greissman is a practice leader in middleware technology and XML. He is one of the founding members of Financial Products Markup Language (FpML), an XML based markup language for currency and interest rate derivatives. He is currently managing the development of projects in Asia, North America and Europe. He has been the system architect for several major capital markets banking systems. Using techniques he has pioneered, he is also the author of the Universal Data Interface (UDI), an XML based middleware tool which automates the process of moving data between packages and systems. He is the author of the General Ledger Interface Application, which automates the creation of journal entries from native source system transactions, for ERP packages such as SAP and PeopleSoft.

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Brian Lynn - Brian Lynn, Vice President, Derivatives Architect at J.P. Morgan, has over 14 years of software applications development experience, five of which have been in financial derivatives. At JP Morgan he is program manager for FpML and is responsible for technology architecture and strategy in its interest rate derivatives and exotics group. Prior to joining JPM in September, he was a Managing Director at CIBC World Markets, where he was responsible for its fixed income quantitative research and development group. Previously at CIBC he was responsible for key parts of its derivatives technology, including a commodity derivatives trading system, spreadsheet analytics, front and middle office risk and P/L reporting applications, a global risk data consolidation system, a global credit exposure calculation system, and various operational reporting applications. He was exposed to fixed income, commodity, equity, credit and FX derivatives. Prior to joining CIBC, he worked in a variety of industries, including a stint developing the Canadian nuclear industry's software development standards. He has a B.A. with honors in Physics from Harvard, where he studied chaos theory.