

# Fixed Income Trading and Platform Architecture

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# Fixed Income Market

- Fixed Income Market mainly a Institutional
- Main Players
  - Broker/Dealers
  - Funds (Hedge Funds, Mutual Funds, Retirement Funds etc)
  - Banks Treasuries
  - Sovereigns, Corporations (Issuers)

# Broker/Dealer

- Brokers/Dealer accommodates the trading both in Primary and Secondary Markets (Market Makers)
- Most of the Brokerage Firms play the role of Broker/Dealer
- Main players in Fixed Income Market
- Trade
  - For Own Books (Traders), Own Funds, Clients and other business units of a firm etc
  - With Large Institutional clients, Private Clients etc.

# Organization Structure

- Front Office
- Middle Office
- Back Office
- Trading Desks
- Departments
- Risk Management Team
- Operations Team
- Traders
- Sales Trader etc

# Departments

- Front Office / Trading
  - Traders
  - Sales Traders etc
- Middle Office / Risk Management
  - Risk Manager
  - Analytics etc
- Back Office / Operations
  - Settlement
  - Accounting
  - Finance etc

# Key System Modules

- Trading Front End / Trade Entry / Trade Capture
- Quote Entry
- Position Management
- Risk Management
- Pricing
- Analytics
- Market Access (Liquidation Sources)
- Market Data Access (Data providers)

# Trade Entry /Quote Entry

- Used by Traders to enter NEW Trades
- Interface to most of the other system modules
- Trades are routed to Liquidation Sources (via OMS/ORS)
- Usually Front end serves as Quote Entry System as well
- Key Features
  - Quick Entry
  - Custom Entry Forms
  - Support for different FI products
  - Various Financial Calculators
  - Calendars
  - Blotter etc

# Position Management

- Also referred to as Portfolio Management
- Monitor and Track Positions
- P&L Calculations
  - Daily
  - Month-to-date
  - Year-to-date
- Portfolio Analytics
  - Pricing
  - Risk Indicators
  - Performance Indicators etc
- Hedging Calculations
  - Recommendations for covering trades etc

# Pricing Engine

- Pricing of various products
- Support for multiple models
- Scope to use custom models
- Custom model development APIs
- Market Data Feed
  - Yield Curve etc

# Market Access

- Access to Liquidation Sources
  - ECNs
  - OTC Markets
  - Other Large Client networks etc
- Single point of access to multiple markets
- Connectivity Gateways
- Standard Protocol Support
  - FIX etc

# Market Data Access

- Market Data Providers
  - Bloomberg
  - Reuters etc
- Market Data
  - Quotes
  - Prices
  - Yields
  - Yield Curves
  - Interest Rates
  - Spreads etc

# Backoffice

- Trade Processing
- Also referred to as Operations or Settlement
- Functions
  - Order Validation
  - Trade Confirmation
  - Settlement etc
- STP (Straight Through Processing)
  - Electronically processing the trade end-to-end

# Reference Data Management

- Instrument Information
  - Issuer
  - CUSIP or security code etc
- Counterparty Info
- Customer Info
- Commissions
- System Users and Rights etc

# Risk Management

- Support for Various Types of FI related Risks
  - Interest Rate Risk
  - Yield Curve Risk
  - Credit Risk
  - Currency Risk etc
- Calculation of Risk Measures
  - Duration
  - Convexity
  - DV01
  - Greeks/Sensitivities
  - Cash Flows etc
- Reporting at different levels etc

# Hedge Calculations

- Calculation of Hedge Equivalents
- Hedge Calculations for
  - Security
  - Position
  - Portfolio
  - Desk
  - Department
  - Branch
- Customization
  - Configuring predefined measures etc

# Market Data

- Data Providers
  - Bloomberg, Reuters etc
- Bond Prices
- Bond Analytics
  - Risk Measures like Duration, Convexity etc
- Bond Rating
- Cash Flow Calculations
- Yield Curves
- Spreads
- Financial News etc

# Trader Analytics

- Basis Trading Analytics
- Strip/reconstitution Analytics
- Butterfly Spread Analysis etc

# Product Classes

- Bonds
- Strips
- Floaters/FRNs
- TIPS
- Forwards (FRAS 3X6 etc)
- Futures (Treasury, Eurodollar etc)
- Bonds with Options
- Options on Futures
- Swaps (IR Swaps, CDS etc)
- Swaptions (Options on Swaps)
- Caps and Floors etc

# Markets & Instruments

- North America
  - Treasuries, Agencies, Corporate Bonds
- UK, Europe
  - Gov Bonds, Muni Bonds, Corporate Bonds,
- Japan
  - Bank debentures, samurai bonds, euro-yen bonds
- Australia, New Zealand
  - Gov Bonds, Corp Bonds
- Derivatives and Other – in all markets
  - Interest Rate Futures, Bond Futures etc

# Market Instruments - Examples

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Thank You  
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