Implementing Risk Solutions - Trends and Challenges
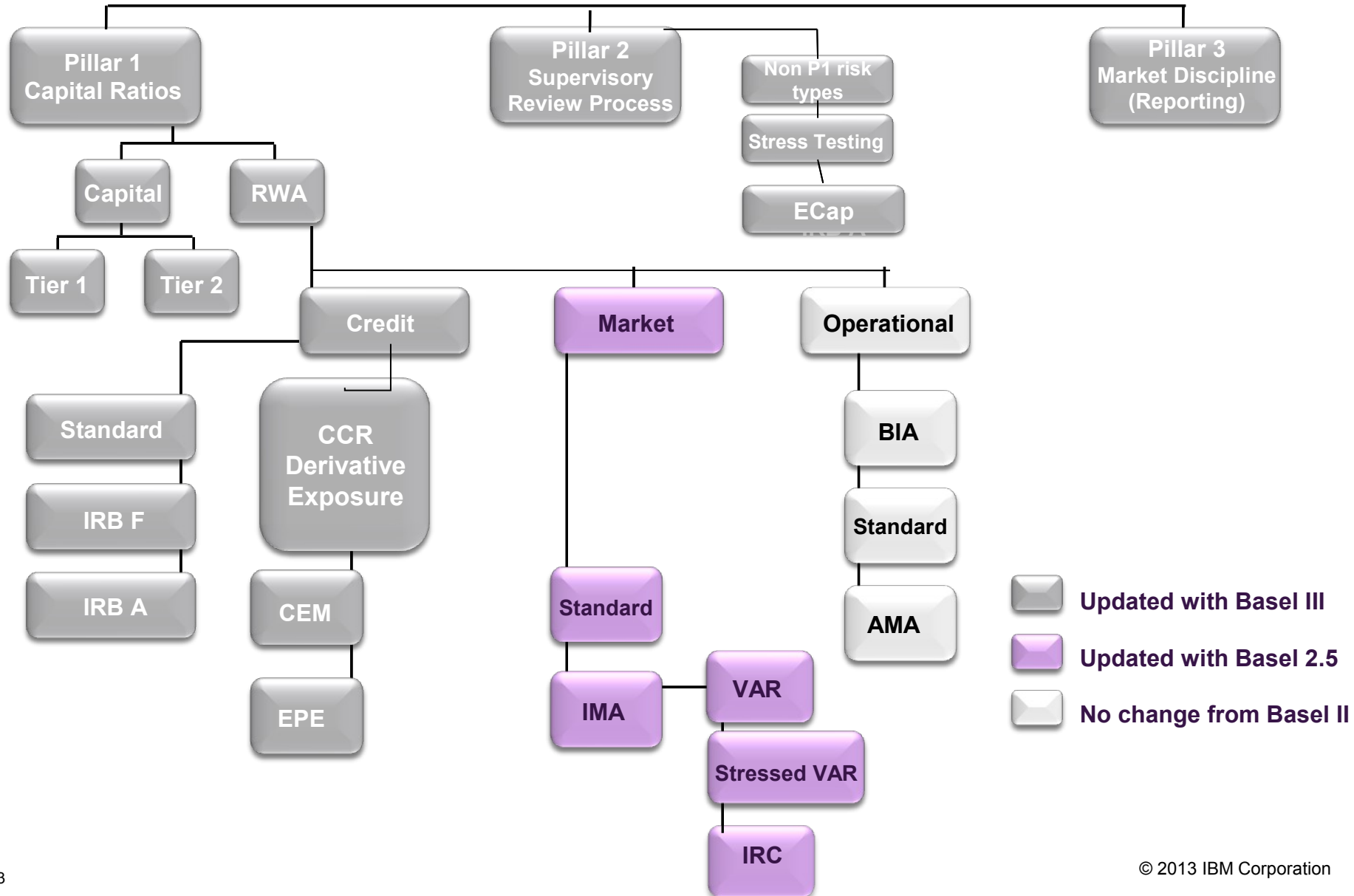
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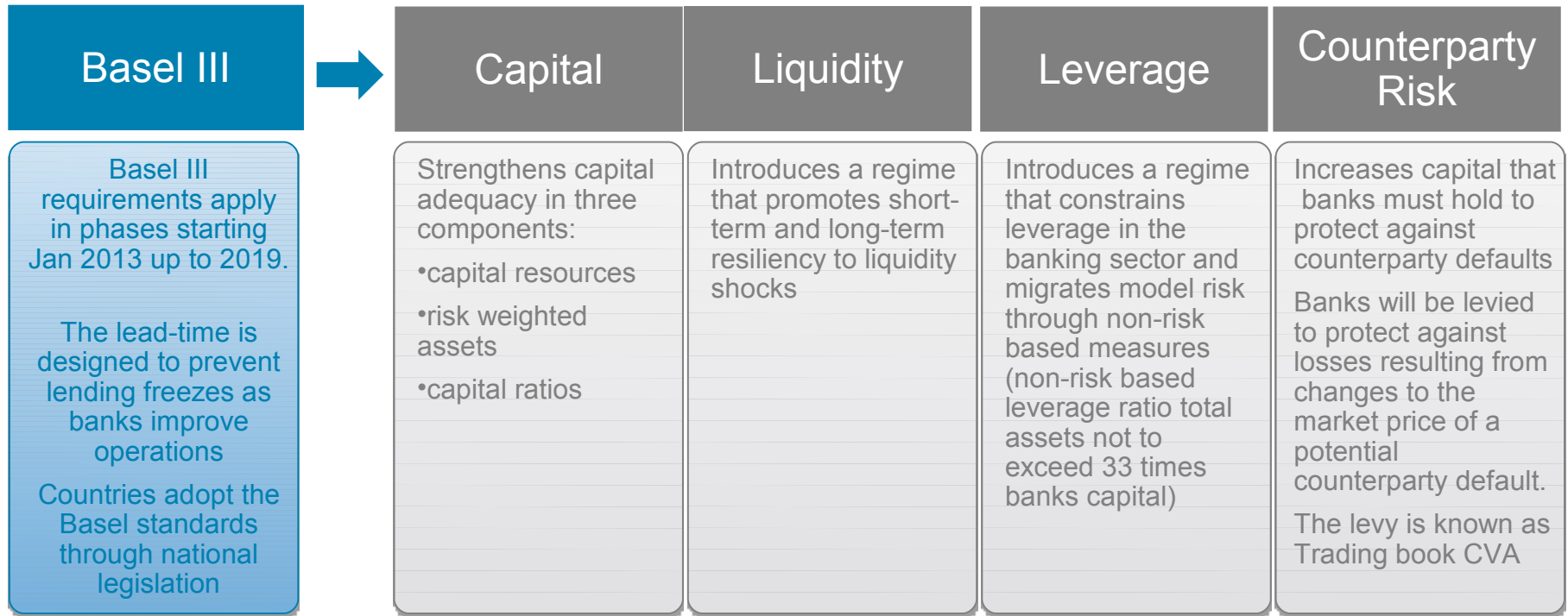
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Agenda

- ❖ Regulation and Risk solutions – Historic view

- ❖ Current Trends with Basel 3

- ❖ Implications: Implementation Challenges

- ❖ IBM Common Architecture and Project Approach

- ❖ Q & A

Regulation and Risk solutions – Historic view

- Pillar 1 — Capital Ratios
  - Capital
    - Tier 1
    - Tier 2
  - RWA
    - Credit
      - Standard
      - IRB F
      - IRB A
      - CCR Derivative Exposure
        - CEM
        - EPE
    - Market
      - Standard
      - IMA
        - VAR
          - Stressed VAR
            - IRC
    - Operational
      - BIA
      - Standard
      - AMA
- Pillar 2 — Supervisory Review Process
  - Non P1 risk types
    - Stress Testing
      - ECap
- Pillar 3 — Market Discipline (Reporting)

Legend:
- Updated with Basel III
- Updated with Basel 2.5
- No change from Basel II

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Current Trends with Basel 3

❖ Banks need risk systems that can keep pace with emerging regulation like Basel III, and regional acts like Dodd-Frank

❖ These regulatory reforms are designed to prevent banks from taking on excessive risk and damaging global financial markets

Basel III	→	Capital	Liquidity	Leverage	Counterparty Risk
Basel III requirements apply in phases starting Jan 2013 up to 2019. The lead-time is designed to prevent lending freezes as banks improve operations Countries adopt the Basel standards through national legislation		Strengthens capital adequacy in three components: • capital resources • risk weighted assets • capital ratios	Introduces a regime that promotes short-term and long-term resiliency to liquidity shocks	Introduces a regime that constrains leverage in the banking sector and migrates model risk through non-risk based measures (non-risk based leverage ratio total assets not to exceed 33 times banks capital)	Increases capital that banks must hold to protect against counterparty defaults Banks will be levied to protect against losses resulting from changes to the market price of a potential counterparty default. The levy is known as Trading book CVA

Implications: Implementation challenges (1/2)

CCR with Basel 3 implementation challenges

❖Need to calculate CVA, Stressed PFEs

❖Need to validate, backtest under IMM

❖Management of increased quantity of collaterals and netting aggreements – need to calculate margin calls and revise

❖Integrate Market risk MtM valuations and use for CCR modules, possibly apply different scenarios and time steps than Market risk
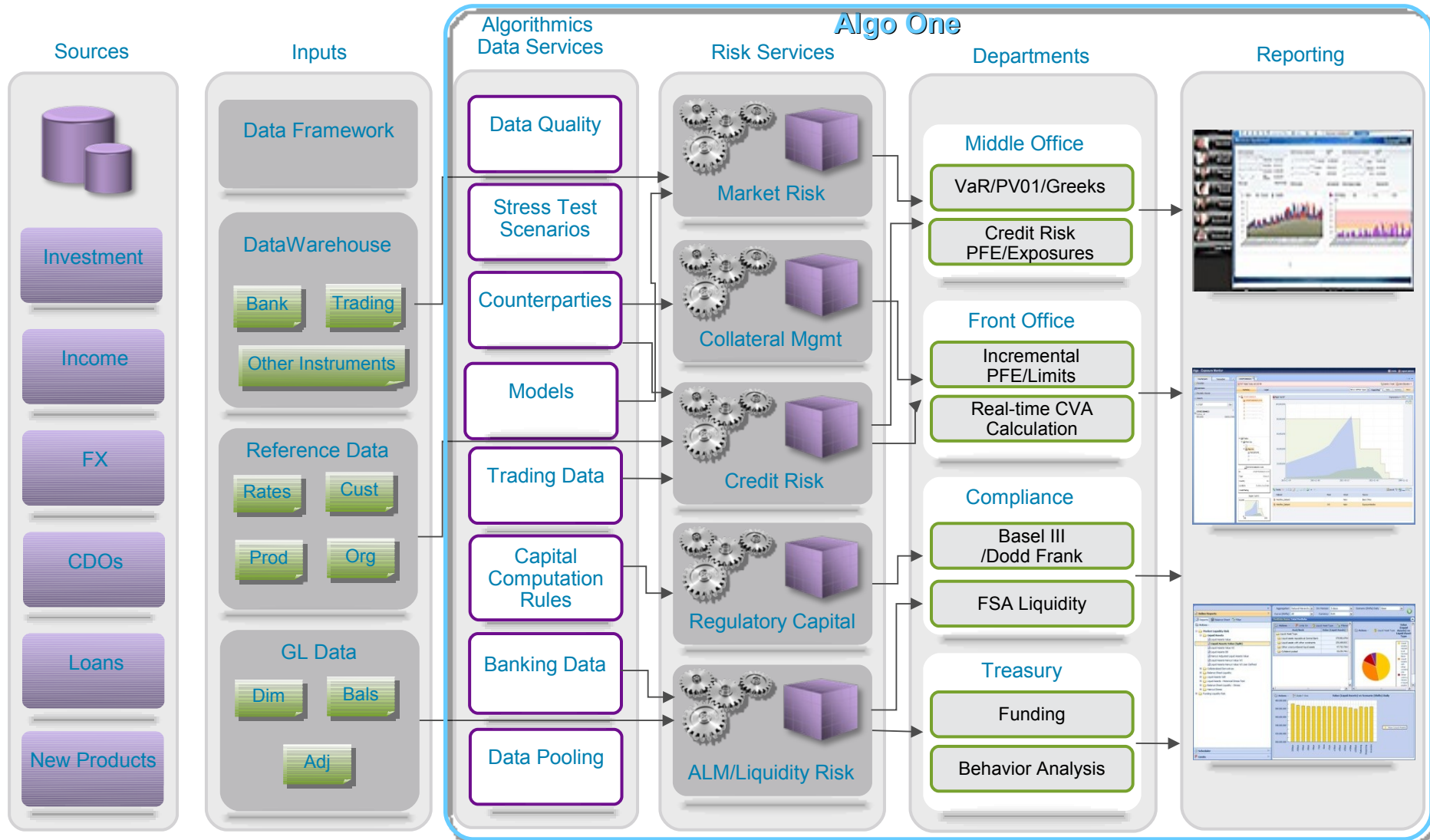
Liqudity risk with Basel 3 implementation challenges

❖Need to calculate short term and medium term liquidity ratios, perform stress tests and report to regulator

❖Need to use data of assets as well as liabilities covering the entire balance sheet positions

❖Accounting and risk management systems need to be integrated requiring major datamart development work

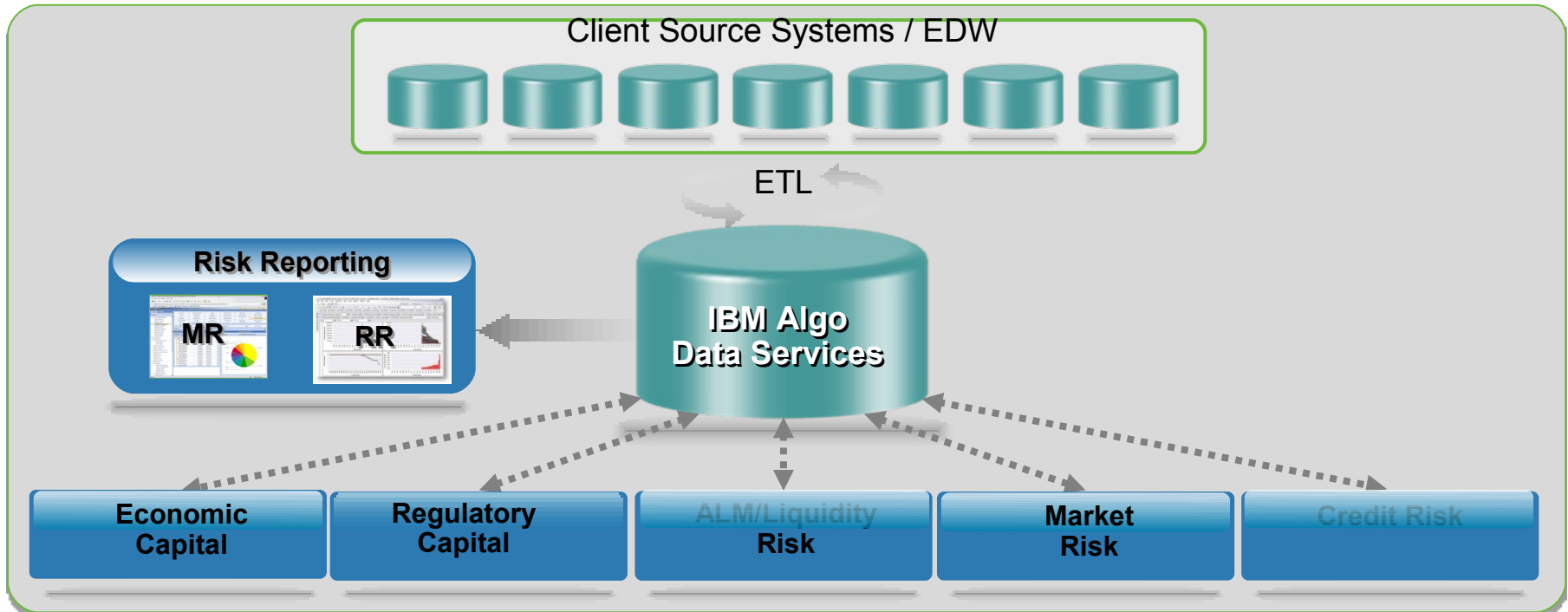# Implications: Implementation challenges (2/2)

Implementation implications of the new requirements

❖Data management (greater deal of data needed, access mutliple sources, carry out mutliple data quality checks and perform reconcliation, and more timely market data)

❖Batch (computations performance daily batch requirements etc, increased trading speed and need for real-time data platform)

❖Calculations (complexity of the products/models/valuations, transparency in calculations)

❖Analytics (scenarios, stress testing across multiple solutions)

❖Reporting (increased need for management and regulatory reporting as well as flexible and faster reporting)

IBM Common ERM Architecture

Algo One

Sources	Inputs	Algorithmics Data Services	Risk Services	Departments	Reporting

Sources

- Investment
- Income
- FX
- CDOs
- Loans
- New Products

Inputs

Data Framework

DataWarehouse
- Bank
- Trading
- Other Instruments

Reference Data
- Rates
- Cust
- Prod
- Org

GL Data
- Dim
- Bals
- Adj

Algorithmics Data Services

- Data Quality
- Stress Test Scenarios
- Counterparties
- Models
- Trading Data
- Capital Computation Rules
- Banking Data
- Data Pooling

Risk Services

- Market Risk
- Collateral Mgmt
- Credit Risk
- Regulatory Capital
- ALM/Liquidity Risk

Departments

Middle Office
- VaR/PV01/Greeks
- Credit Risk PFE/Exposures

Front Office
- Incremental PFE/Limits
- Real-time CVA Calculation

Compliance
- Basel III /Dodd Frank
- FSA Liquidity

Treasury
- Funding
- Behavior Analysis

Reporting

IBM Data Architecture

Client Source Systems / EDW

ETL

Risk Reporting

MR   RR

IBM Algo
Data Services

Economic Capital	Regulatory Capital	ALM/Liquidity Risk	Market Risk	Credit Risk

- Centralized Data Architecture – data loaded once to be used across all risk types

- Apply transformation rules, mapping and use default values

- Product by product descriptions through data dictionaries

- Database stores historical reporting data accessible from IBM's Business reporting application or from Regulatory Reporting used for trend analysis and backtesting

- Usage of common data fields across different risk types

IBM Risk Analytics Project Approach

❖Define tasks and outputs for every stage of the project

❖Make sure our clients to explain/understand data requirements and support full data design and build stages

❖Work with the business to build reports and generate validation templates based on selected sample dataset

❖Perform business validation and advise on technical enhancements, support the full operational cycle

❖Deploy global solution experts together with local risk management consultants on TR projects

❖**DELIVER HIGH QUALITY SOLUTIONS ON TIME AND WITHIN BUDGET** ☺

Q&A