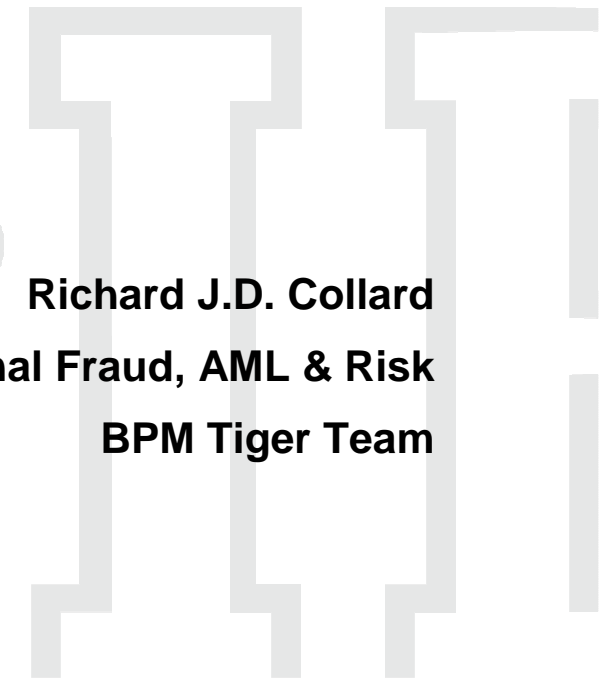
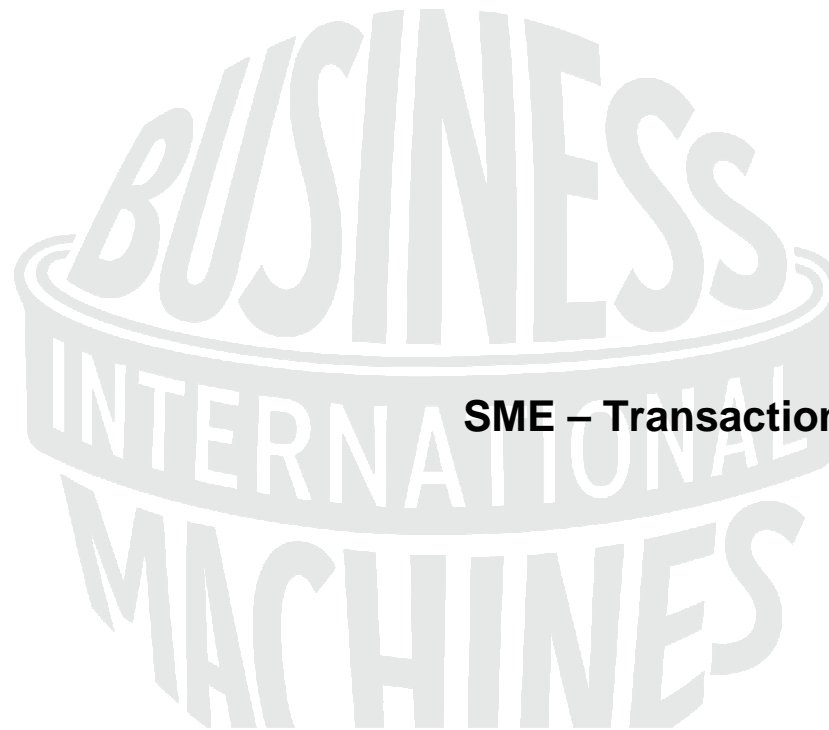




Risk Management



Richard J.D. Collard
SME – Transactional Fraud, AML & Risk
BPM Tiger Team



Risk Management - Where does one start?

- Means many things to many parts of any business
- No single definition is likely to be appropriate
- Managing an Institution's Exposure
 - To Counter-parties
 - To Customers
 - To Employees
- Driven by strict regulatory regime
- Failure of Sub-prime mortgage market in 2007-8 prompted fundamental re-assessment of the management of risk and the relationship of many lending institutions with their customers
- The US Financial Crisis Inquiry Commission blamed the crash on "the failings of regulators and policymakers, greedy bankers and "systemic breaches of accountability and ethics at all levels"

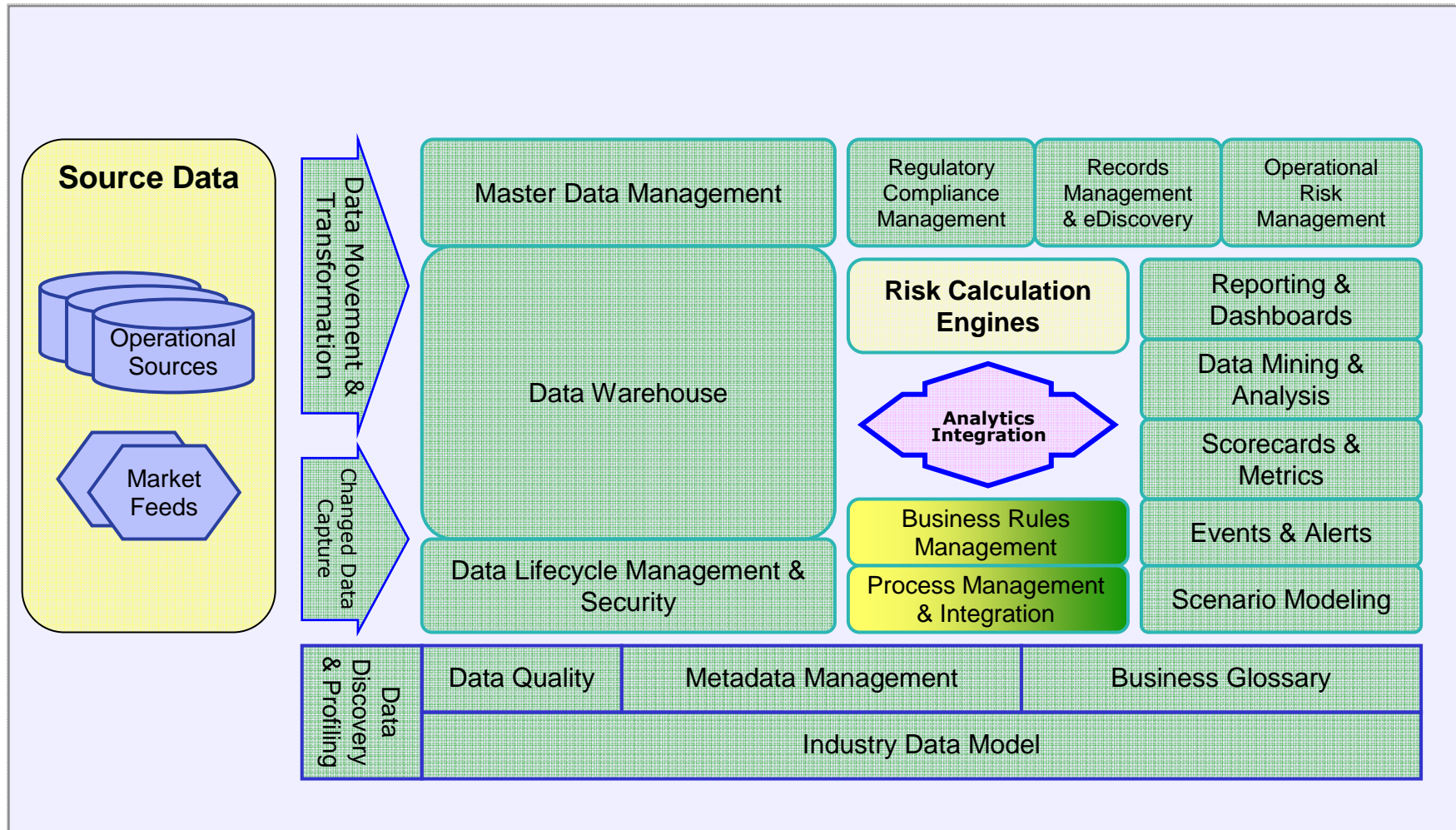


Risk Management - Where does one start?

- Michael Lewis - 'Liar's Poker' & 'The Big Short'
 - 'Banks have become socially risk-averse and they will be fully risk-averse for a while. But the next set of problems could be within European banking.....'
- Focus on managing customer risk:
 - Effectively
 - Consistently
 - Respectfully



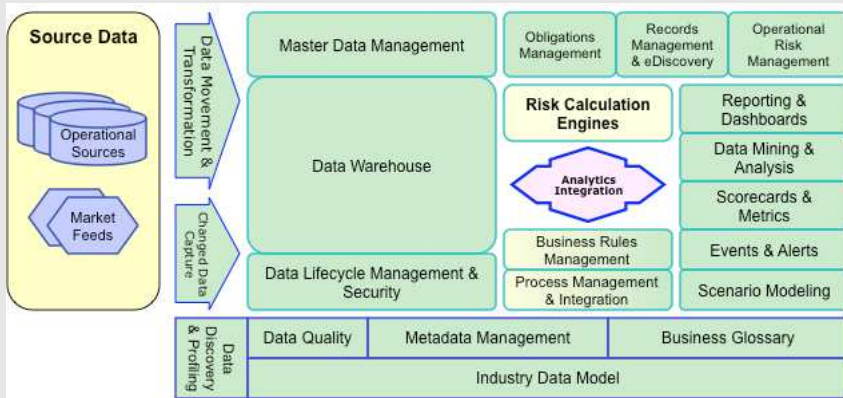
IBM has made over \$14 bn investment to provide banking and financial markets with underlying information and analytics capabilities for effective risk management



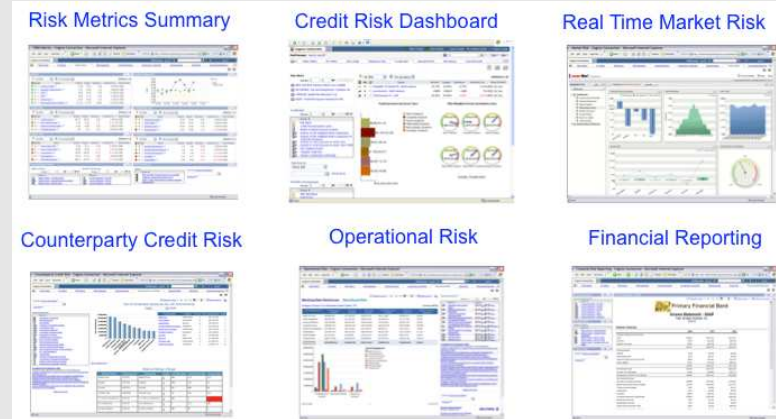


IBM has also developed several solutions and accelerators to help our clients achieve their enterprise risk management and compliance objectives

Finance & Integrated Risk Management Framework



Finance & Integrated Risk Management Dashboard



Data Model and Business Solution Templates

	Business Solution Templates		
Relationship Marketing	<ul style="list-style-type: none"> Customer Interaction Analysis Customer Investment Profile Individual Customer Profile Wallet Share Analysis 	<ul style="list-style-type: none"> Customer Complaints Delinquency Analysis Customer Loyalty Market Analysis 	<ul style="list-style-type: none"> Campaign Analysis Cross Sell Analysis Customer Attrition Lead Analysis
Profitability	<ul style="list-style-type: none"> Transaction Analysis Activity Based Costing Analysis Insurance Product Analysis Investment Arrangement Analysis 	<ul style="list-style-type: none"> Profitability Analysis Channel Profitability Customer Lifetime Value Customer Profitability 	<ul style="list-style-type: none"> Product Profitability Product Analysis Organization Unit Profitability Performance Measurement
Risk Management	<ul style="list-style-type: none"> Credit Risk Profile Credit Risk Assessment Asset Securitization Analysis Operational Risk Assessment 	<ul style="list-style-type: none"> Outstandings Analysis Portfolio Credit Exposure Security Analysis Liquidity Risk 	<ul style="list-style-type: none"> Debt Restructuring Involved Party Exposure Location Exposure Non Performing Loan
Asset & Liability Management	<ul style="list-style-type: none"> Interest Rate Sensitivity Liquidity Analysis Short Term Funding Management Financial Management Accounting 	<ul style="list-style-type: none"> Capital Allocation Analysis Capital Procurement Credit Loss Provision Funds Maturity Analysis 	<ul style="list-style-type: none"> Net Interest Margin Variance Structured Finance Analysis Equity Position Exposure Income Analysis
Compliance	<ul style="list-style-type: none"> Financial Capital Adequacy Analysis Structure Of Regulatory Capital Suspicious Activity Analysis SOX Balance Sheet Analysis 	<ul style="list-style-type: none"> Cash Flow Indirect Financial Institution Analysis Income Statement By Function Analysis Statement Of Changes In Equity Analysis Balance Sheet Portfolio Basis Approach Analysis 	

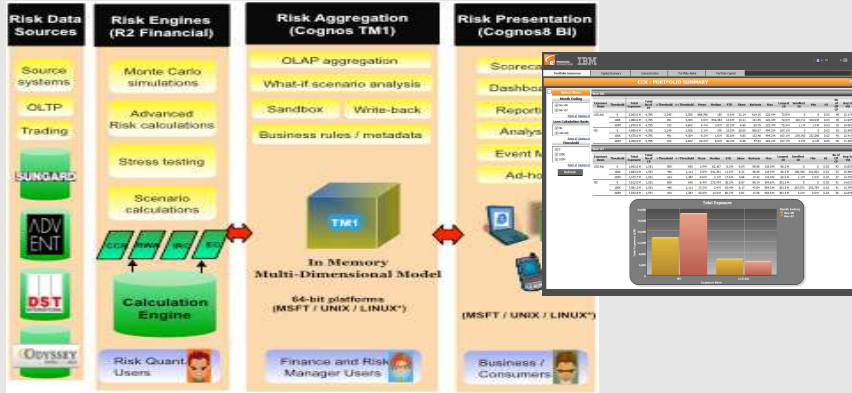
Risk-Adjusted Profitability Blueprint





IBM has also developed several solutions and accelerators to help our clients achieve their enterprise risk management and compliance objectives

Risk Scenario Modeling and Analytics



Liquidity Risk and Asset Liability Management

Objective: To provide optimal Floating % that minimize interest expense and risk (volatility) considering net interest margin.

Inputs (\$ Yr)

- Forecast Asset profile & Actual run out
- Forecast Cash profile (by major cur)
- Forecast Debt profile (Bank, CP, B Term)
- Existing Fixed Debt Int Exp (Sys 10)
- Incremental Fixed/Float Debt decision
- Market data for IM simulation

Key process guidelines

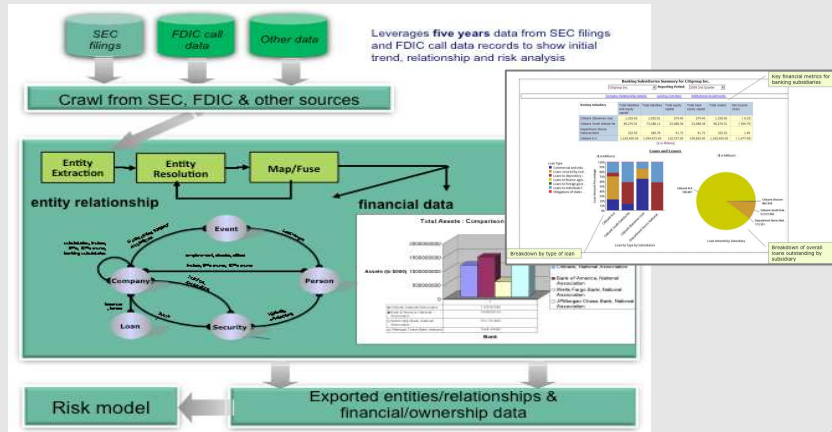
- WR Model - LHM simulates 1M, 3M, 6Y rates (1000 sims)
- New fixed debt assumed 5Y, new float at 3M (1M for CP and cash)
- 10 Yr float rates
- Initially USD, then EUR, JPY, GBP, BRL, CAD
- Calculate interest expense & NIM for new fixed and all floating debt

Output

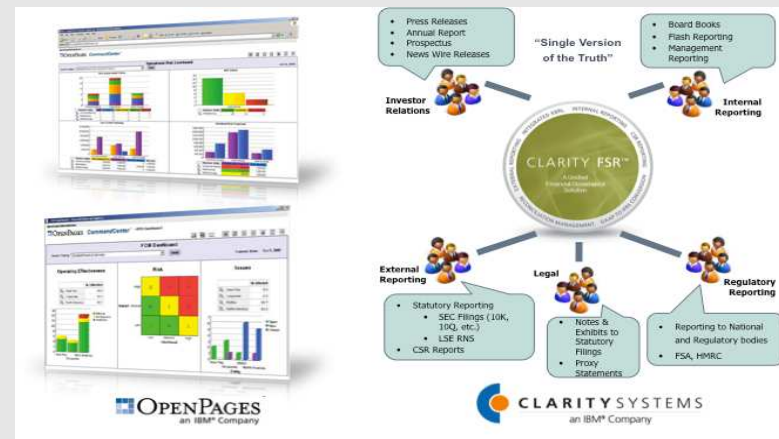
	Expected Value & 85% VAR	Histogram	Time Series	Efficient Frontier
Int Exp	✓	✓	✓	✓
NIM	✓	✓	✓	✓
Int Rate	✓	✓	✓	✓

Additional visualizations include Interest Expense Matrix, Interest Rate Forecast, and Asset Contributions charts.

Next Generation Credit Risk Analytics



Regulatory Compliance & Operational Risk Mgmt





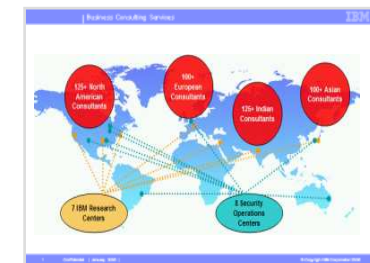
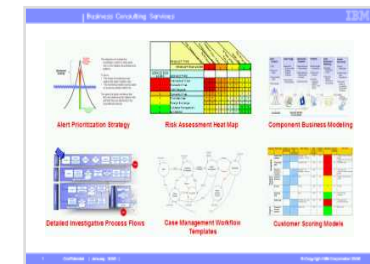
Leading banks & financial markets use IBM technology for risk management

<h3><u>Retail Credit Risk</u></h3>	<h3><u>Wholesale Credit Risk</u></h3> <h3><u>Market Risk</u></h3> <h3><u>Operational Risk</u></h3>	<h3><u>Economic/Regulatory Capital</u></h3> <h3><u>Fraud</u></h3> <h3><u>Other (Liquidity, Country, Etc.)</u></h3>
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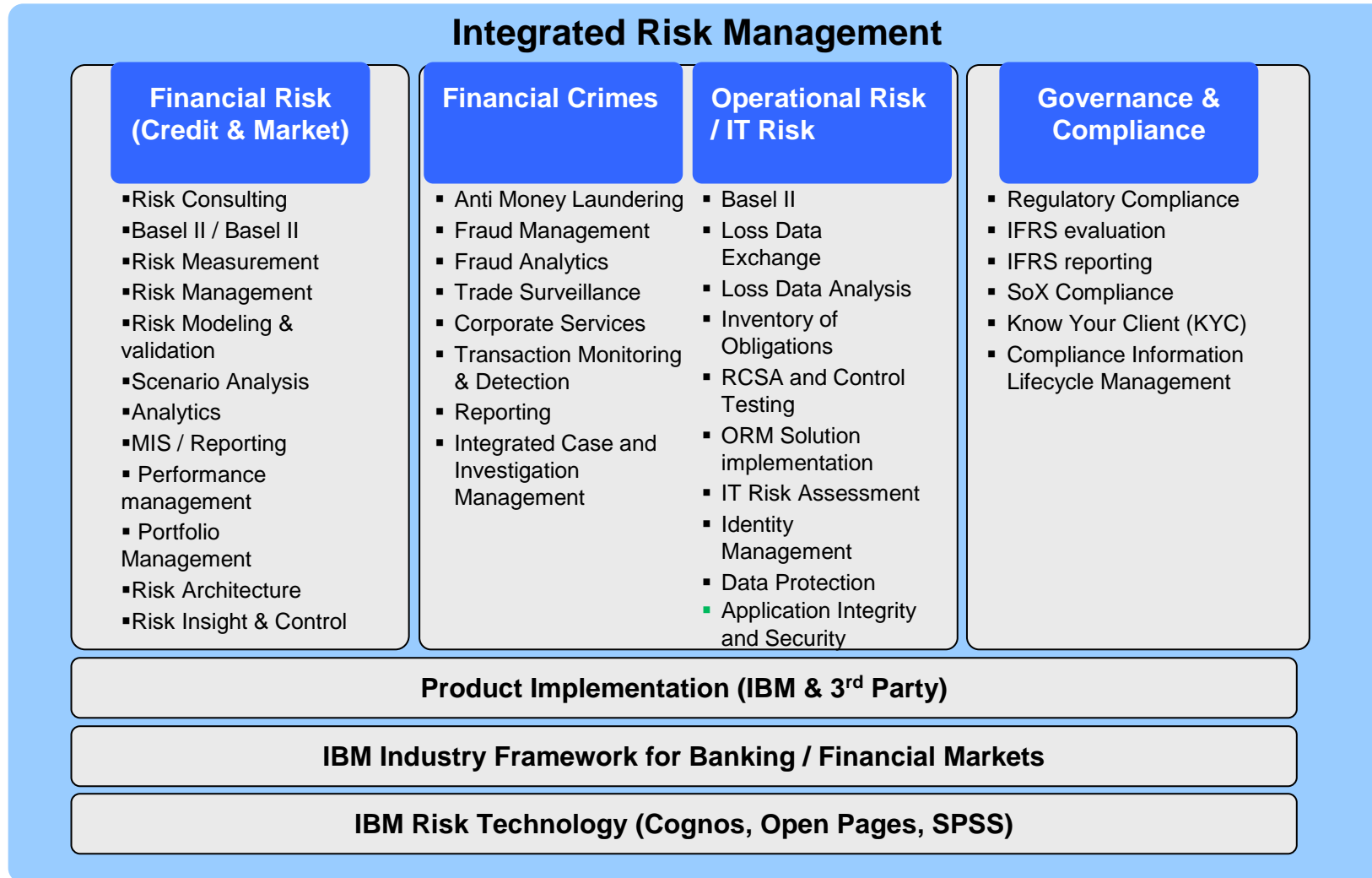
IBM's unparalleled capabilities in Financial Crimes Management

<p>Industry Recognition</p>	<ul style="list-style-type: none"> • 2010 Top Strategic Risk & Compliance Partner for the Financial Services Industry (Tower Group) • 2011 Top Analytics and Business Intelligence Service Provider (Gartner Group), rating highest on both “ability to execute” and “completeness of vision” in Gartner’s Magic Quadrant.
<p>Broad and Deep Domain Expertise</p>	<ul style="list-style-type: none"> • Broad expertise & experience across all of Financial Crimes (AML, KYC, Fraud, Case Management, Sanctions, Governance, Enterprise Risk) • Tested reference models for financial crimes (architecture, workflows, business processes, risk assessments, scoring models, scenarios) • Proven IBM-WWPPM project management methodology • System Implementation Accelerators
<p>Capabilities and Experience</p>	<ul style="list-style-type: none"> • 1500 Risk & Compliance consultants globally who have actually developed parts of the key solutions in the industry • 125-person Risk and Compliance CoE with deep Norkom experience • 100-person Analytics CoE, 75% of whom had graduate or Ph.D. level degrees in related fields, growing at 25% annually • 7 IBM Research Labs worldwide, producing cutting-edge analytical methods and solutions
<p>Proven Track Record</p>	<ul style="list-style-type: none"> • Delivered measurable results in our past engagements • Managed entire lifecycle of implementations with ability to establish strong project management and governance • Deep relationships with top Financial Institutions around the globe • 8-year global strategic partnership with Norkom and Actimize
<p>Existing Relationship</p>	<ul style="list-style-type: none"> • Local team of industry consultants who have prior experience at your institution across numerous projects • Dedicated team within IBM focused on understanding your architecture and current business challenges in order to identify solutions





IBM's Integrated Risk Management takes comprehensive view of various risk categories





Société Générale – Customer Risk Management



SG : Major retail bank in France, >9mn customers, 2.5k Branches, 11k branch advisors

Branch Advisors spend 1.5 hr each day understanding their customers' account situations and deciding on next actions

They apply their own knowledge to decide which customer situation to resolve first and actions to take

High turnover of staff = little control of this knowledge

The Bank's management needs to understand how many - and which - situations are resolved, their outcomes and which ones may become critical

Management has identified there is the ability to reduce risk - whilst improving the advisors' productivity and support





Why Business Rules ?



Easy authoring of programs using many simple rules

- Low cost & high speed

Agility

- Significant increase in the ability to respond to change requests in existing situations - by LOB
- Rules lifecycle is disconnected from the software maintenance cycle - reducing update cost

Native documentation

- Easier impact analysis
- Rules expressed in French, easy to communicate between IT and Business
- Auditability and tracability of policies

Centralized management of rules

- Unique reference of rules
- Integrated in the management system



Major Benefits



- Project deployed in only 12 months
- Immediate business take-up, at all levels
 - From Branch; to Management; to Risk office
- 40mins won, per day, per advisor x 11,000 advisors
- This has also become a training system for new employees
- Provides better quality and consistent service to customers in 'difficult' situations



Société Générale – Risk Management

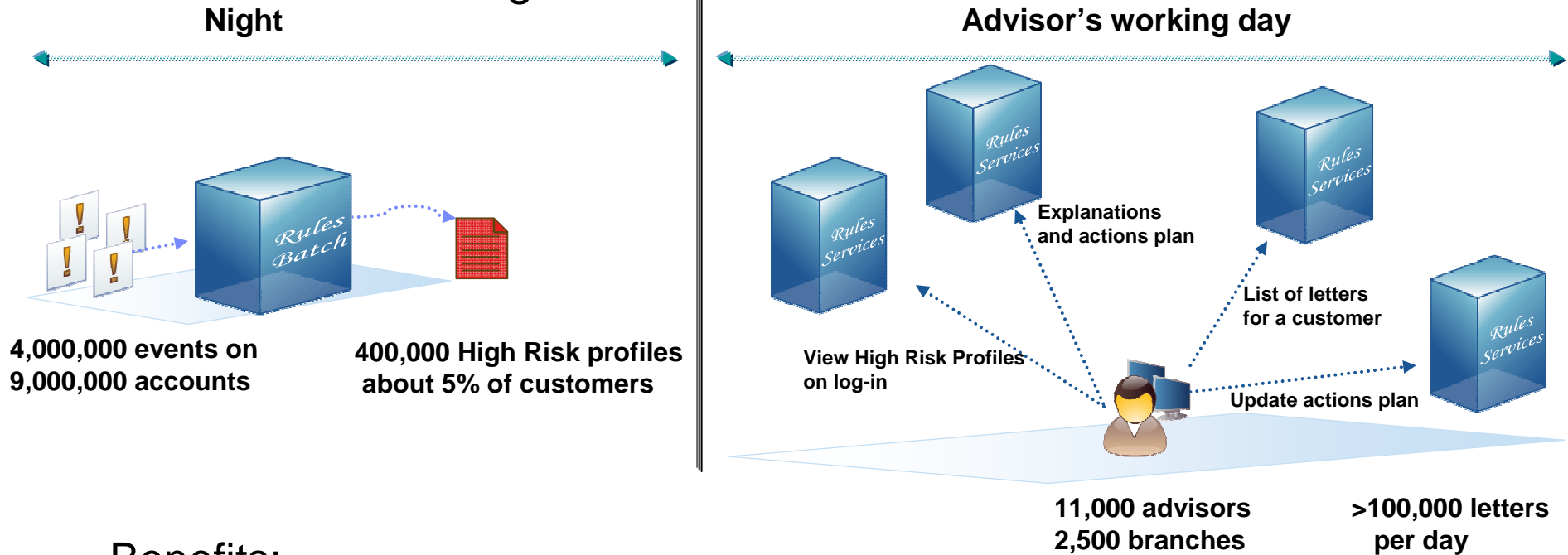


Situation	<ul style="list-style-type: none">▪ Long time spent each day by branch officers to assess customer and account situations requiring actions▪ Complexity of cases and related actions▪ Inconsistent operations leading to unmanaged situations
Goals	<ul style="list-style-type: none">▪ Improve risk detection and management▪ Increase branch financial advisor efficiency managing risk profiles▪ Automate action recommendations
Solution	<ul style="list-style-type: none">▪ Service Oriented Architecture sharing 400 business rules▪ 7 rule services (Batch and Transaction processing programs) detecting and managing 400,000 high risk customer cases▪ Determine status and priority of 'at risk' situations▪ Recommend and explain client actions to branch financial advisors▪ Generate personalized mails as actions (100 000 to 200 000 mails per day)
Benefits	<ul style="list-style-type: none">▪ Manage 200 risk management profiles in 7 categories▪ Allow business users to manage and understand the risk profiles▪ Gain 40mn/day/advisor (11 000 advisors in 2500 branches)



“High risk customer profile” process

Business case & targeted ROI



Benefits:

- Manage 200 risk management profiles in 7 categories
- Allow business users to manage & understand the risk profiles
- Gain ~40 mins/day/advisor - 300 man days per day!!!!



IBM and Risk Management in Banking & Finance

- Sanctions Screening
 - Developing modular, hosted screening capabilities for toxic payments
- AML & KYC / Customer on-boarding
- Global General Ledger Reconciliation
- Fraud Detection
- Creation of SVOC
- Mobile Funds - P2P AML Project



Evolving Risks & Implications



Significant Fraud losses

- Identity theft is a cross channel problem that includes data compromise, social engineering, address changes, account changes and account takeover
 - Impacts the Online Channel and Online Fraud as the first point of compromise
- Internal Fraud
 - Association of Certified Fraud Examiners report 7% revenue loss to Internal Fraud in all industries; Banking highest number of cases, some Banks believe 25% of all fraud has insider involvement
 - 25% of internal frauds involve at least \$1 million
 - Average duration of an internal fraud is two years

Anti Money Laundering and Compliance

- Penalties
 - HSBC USA in Money-Laundering Probe for its "global banknotes" business, Aug 2010
 - ABN Amro Bank N.V. \$500M fine Q2 2010
 - Lloyds TSB \$350M fine Q1 2009
 - Wachovia \$160M fine Q1 2010
 - SocGen Rogue Employee Trading
 - Numerous cases in the United States: Regions, Washington Mutual, Union Bank, Bank of NY
- What does a Cease and Desist order mean?
 - Reputation risk – major US Bank lost 2% of capitalization when order was announced
 - Merger and acquisition on hold until cleared
 - Possible officer investigation due to collusion concerns



Mulțumesc!

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IBM