



May, 2005

# **Federal Reserve Bank of Boston Operational Risk Conference**

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*The* **BANK of NEW YORK**<sup>™</sup>

# Topic Outline

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- Governance and Oversight
- Overview of Capital Model
- Relevant Risk Reporting
- Business Line Risk Review

## Governance & Oversight

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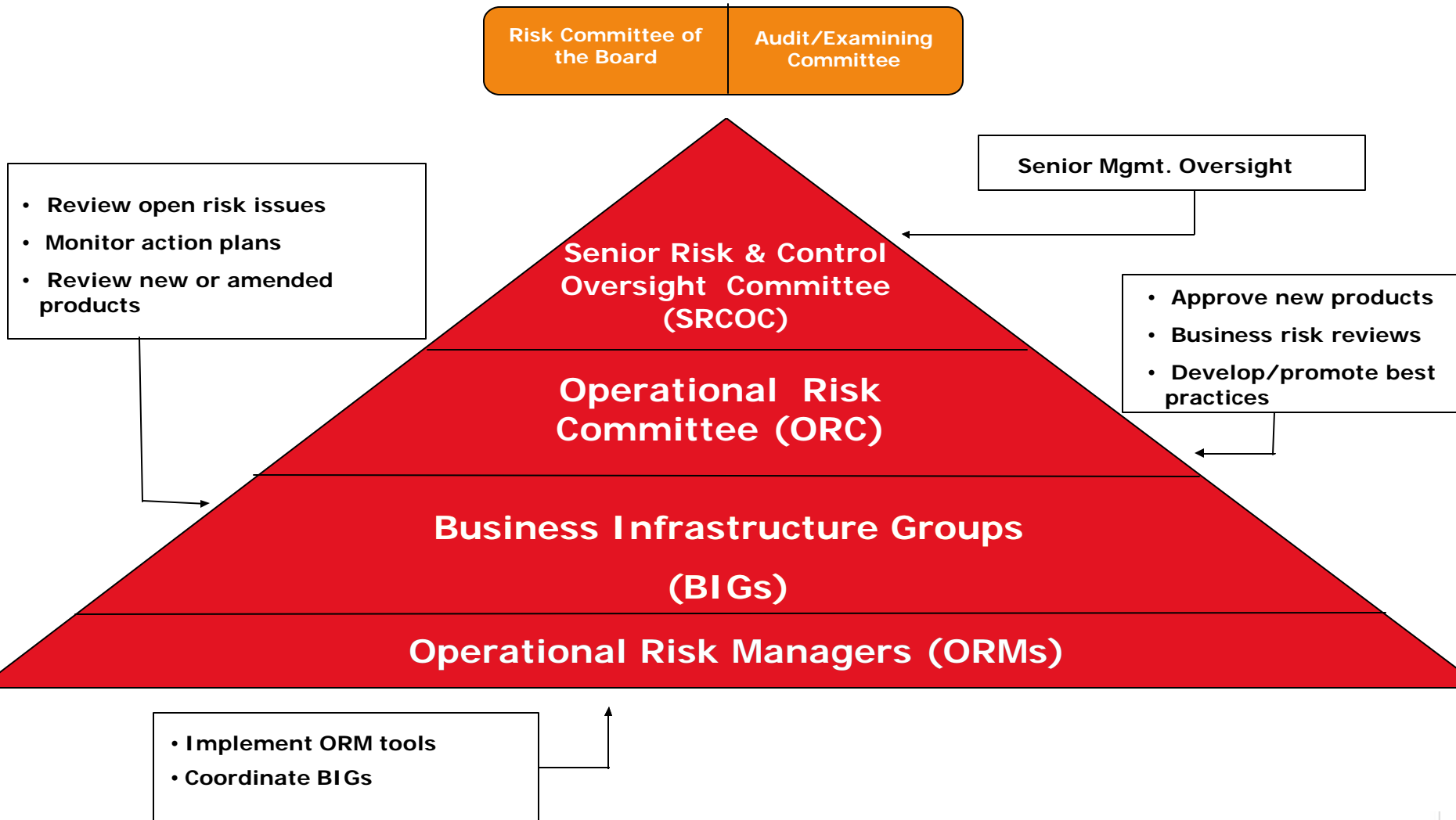
*“Corporate governance is the glue that holds an organization together in pursuit of its objectives while risk management provides the resilience.”*

*- Kevin W. Knight*  
*Chairman*  
*ISO Working Group on Risk*  
*Management Terminology*

# Our Risk Management and Governance Framework

Risk Category	Board of Directors Oversight	Senior Mgmt Oversight	Independent Decision Making		Coordination
			Committee	Individuals	
Credit	Risk Committee of the Board	Loan Review	Portfolio Mgmt Committee	Division Portfolio Managers	Business Infrastructure Groups (BIGs)
Market		Market Risk Committee	Market Risk Committee/ Asset & Liability Committee	Market Risk Managers	
Operational		Senior Risk & Control Oversight Committee	Operational Risk Committee	Operational Risk Managers	

# Our Operational Risk Governance Hierarchy



# Effective Governance and Oversight: Challenges

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- Obtaining buy-in from business lines and providing value
- Avoiding redundancies
- Developing a common risk language and promoting risk awareness
- Overseeing the development of a practical and effective capital model
- Reporting relevant information to internal risk committees and governing bodies



# Obtaining Buy-In and Providing Value: Creation of Business Infrastructure Groups

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- Single forum for risk management at the business line level – Business Infrastructure Group
- Membership includes risk/control functions for business line (e.g., operational risk, credit risk, market risk, legal, audit, compliance, technology, operations, etc.)
- Chaired by the business owner- ORM facilitates meeting agenda and reporting
- Meets regularly to discuss new and outstanding risk issues, review and approve business practices, identify solutions and track progress on action plans
- Members complete written risk analysis for new products approvals by the Operational Risk Committee (ORC)
- Escalates significant risk issues/new products to ORC and Senior Risk & Control Oversight Committee



# Avoiding Redundancies

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Challenge: Integrate various regulatory mandates in an effective and efficient way.

- Regularly review existing committee structures, mandates & memberships
- Establish hierarchical structure that leverages current processes
- Expand or consolidate certain committees and/or revise mandates
- Obtain organizational buy-in for changes





# Developing a Common Risk Language

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Established a standard risk profile reporting format for business risk reviews of business lines incorporating:

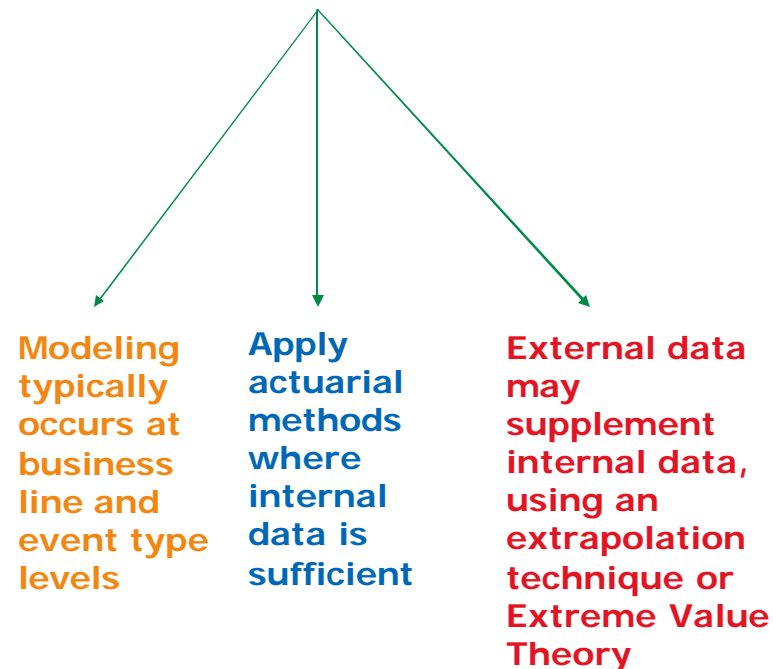
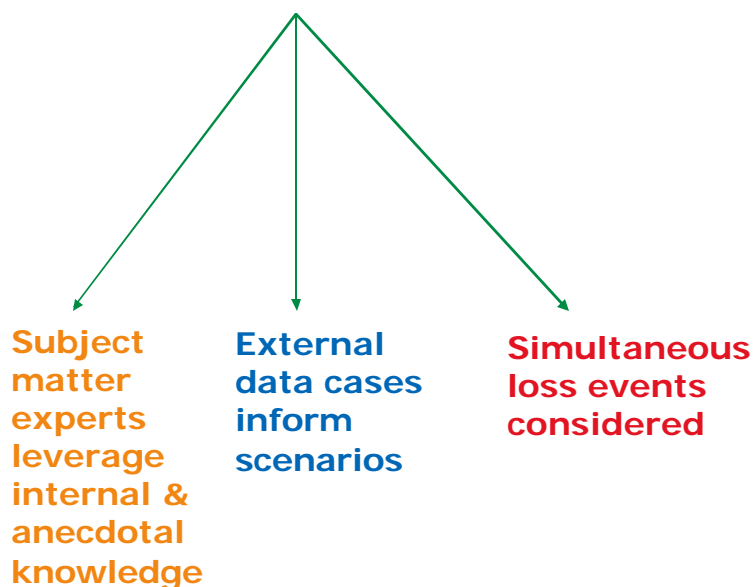
- Control environment review
  - Risk scorecard results – status of action plans
  - Key risk indicator trend analysis
  - Operational losses – actual and potential
  - Scenario analysis (in progress)
  - Audit results
  - Compliance results
- Risk mitigation achievements
  - Major improvements (i.e., IT developments, re-engineered processes, etc.)
- Economic Capital
  - Expected losses, potential losses and risk adjusted return

# Developing an Effective and Practical Capital Model

## Capital Quantification Methods Proposed in the Industry

### Scenario-based Approach

### Loss Distribution Approach



# BNY Capital Model Objectives

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- Risk-sensitive – forward looking
  - Reflect changes in the business and control environment
  - Adjust for acquisitions and divestitures
  - Capture the risk of multiple simultaneous/linked losses in a risk-sensitive manner
- Recognizes risk mitigation
  - Map insurance coverage to business lines, event types or scenarios
  - Possible adjustment to frequencies with qualitative and statistical support
- Motivate Good Behavior
  - Integrates the risk management and measurement processes
  - Provides incentives for business managers to mitigate risks

# Our AMA Capital Model

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## ■ **Internal loss data**

- Where sufficient, utilized to estimate frequency and severity
- Reported to senior risk committees and the Board

## ■ **External loss data**

- Current Economic: Leveraged as a proxy for severity based on extreme value theory in our economic model
- Planned AMA: Used to inform scenarios and benchmark internal loss estimates for scenarios

## ■ **Scenarios – in progress**

- Capture the risk of simultaneous loss events and firm-specific risk
- Capture tail events and calibrate unexpected loss

## ■ **Risk assessment scorecard / KRIs / other qualitative considerations**

- Improve risk management and suggest model refinement
- Capital allocation mechanism

# Operational Risk Capital: Interim Economic Model

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- Capital calculation using “Peaks Over Threshold” methodology
  - Derived frequency distribution using Bank’s firm-wide arrival rate of losses over \$1MM (1999-2004) extrapolated QIS industry loss frequency data by business line
  - Utilized FRB-Boston’s study of large operational losses to determine an EVT-based severity distribution for large losses (>\$1MM)
  - Combined severity and frequency distributions in Monte Carlo simulations to determine level of total aggregate bank capital required
  - Add-on for losses under \$1 MM for EL- used highest single year’s aggregate sum of losses < \$1MM.
  - Allocate undiversified total capital to business lines based on scorecards
  - Diversification benefit held at the corporate level

# Milestones Reached

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- Six years of internal loss data
- Four years experience with KRI monitoring system
- Three years experience with ORM scorecard
- Refinement of risk management governance and oversight
  - Risk management at the business line level (BIGs)
  - Governance and board reporting (Committee structures)
- Scenario analysis workshops with business managers
- Statistical economic capital model

## Next Steps

- Incorporate results of scenario analysis into capital model for AMA qualification

# Operational Risk Capital Model: Scenario Analysis Goals

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- Evaluate relevant external loss data, output from our risk assessment and monitoring tools and internal committee data to generate potential scenarios.
- Obtain expert opinions from business line management and ORM to derive scenario probabilities and severities
- Evaluate exposures related to potential simultaneous events
- Provide frequency and severity data to develop loss distribution tails in capital model
- Increase transparency, evaluate Bank vulnerabilities, and mitigate/transfer risk (where possible)
- Incorporate scenario results into capital model
- Relate all operational risk tools and external data within our framework for relevancy and gaps



# Relevant Risk Reporting: An Evolving Process

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## **Stage 1: Educate various committees and Board and develop blueprint for OpRisk framework**

- Define operational risk – case studies
- Review regulatory requirements – sound practice standards
- Develop strategy for ORM framework
- Report progress/status of implementation

## **Stage 2: Build the tools/models**

- Demonstrate OpRisk tools and review output
- Review economic/regulatory capital model /capital allocation methodology

# Relevant Risk Reporting: An Evolving Process

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## **Stage 3: Report operational risk exposures**

- Operational Risk Assessment Scorecard results
- Key risk indicator conditions
- Operational risk loss experience
- Capital requirements/capital allocation/RAROC

# Risk Reporting: Business Line Risk Review

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## Business Line ABC:

- Major Business Activities/Market Statistics/Business Drivers
- Risk Management Process
- Risk Profile and Risk Assessment
- Key Risk Indicator trends
- Loss History
- Revenues/Returns
- Economic Capital

# Business Line Risk Review - Example

## Internal Loss History

<u>Period</u>	<u>Amount</u>	<u>Comment</u>
2004	\$11.1 MM	80% of total value attributable to 1 large loss
1999-20003	\$ 8.2 MM	Mostly due to aged reconciliation differences

## Relevant External Losses

<u>Notable external loss (Name)</u>	<u>Business Line</u>	<u>Amount</u>	<u>Comment</u>
Bank ABC	Agency Services	\$95MM	Fraud –Ponzi Scheme

## Revenues/Returns

<u>Revenues</u>		<u>Operating Margin</u>		<u>Return on Economic Capital</u>	
<u>2003</u>	<u>2004</u>	<u>2003</u>	<u>2004</u>	<u>2003</u>	<u>2004</u>
\$316MM	\$332MM	44%	46%	17%	19%

## Economic Capital

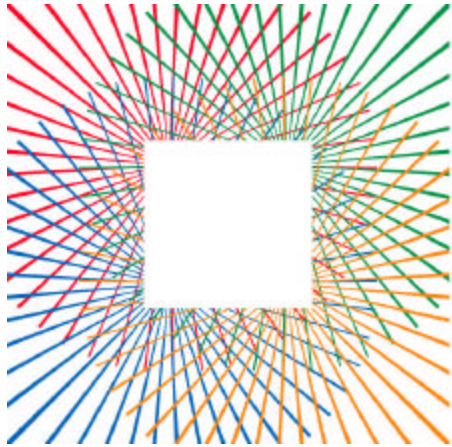
<u>OpRisk</u>	<u>TOTAL</u>
\$XXMM	\$531MM

# Operational Risk Reporting – The Road Ahead

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## Topics for future Board Consideration:

- Requests for more business specific risk discussions
- Increasing focus on risk vs. reward analysis
- Insurance analysis/rationalization of coverage
- Market disclosures
- Benchmarking operational risk best practices vs. peers



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