



Multiple Points of Failure

- a New View on Risk Management

PRMIA Toronto

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The Risk Industry's Fastest Growing
Professional Association





Single Points of Failure

- Brittle Systems
- Systems That Fail Badly
 - Airport Security
 - Passwords
 - Hard Drives
 - Encryption
 - Scarfo



Progression of Risk Management

- A Child of the '80s
 - Shaped by the Chicago Markets
 - Somewhat Embarrassed by the Awe of the 1987 Stock Market Crash
- A Child of the '90s
 - Shaped by Risk Management Debacles
 - More Likely to be a Cop



Progression of Risk Management

- A Child of the late '90s
 - Shaped by more RM Debacles
 - Realizing the Interconnectedness of Markets
 - Seriously Advancing Quantitative Methods
- Risk Management in Transition
 - Sees the Cop as Unsustainable
 - Seriously Advancing Quantitative Methods
 - See Risk Management with Many Nuances
 - Nothing is independent



Focus/Goals of Risk Management

- The Middle of the Distribution
 - Active Risk Management
 - Indexing
- The Tail of the Distribution
 - Exotics
 - Capital Allocation
 - RAROC
- What about the path between these?



The Creation of Risk

- Is Risk Biblical?
- It is of Human Origin
- It is Present at Every Business
 - Otherwise, what's the point?
- It is Rarely Untouched
- It is Rarely Touched by Only a Few



The Management of Risk

- Is Risk Management Biblical?
- It is of Human Origin
- It is Mostly Touched by Only a Few



The Path of a Problem

- Problems Rarely Begin in the Tail
- Examples
 - What company has been wiped out by an overnight 'gap' in a market?
 - Most cited Case Studies
 - Orange County
 - MG
 - Barings
 - AIB
 - LTCM



Multiple Points of Failure

The Concept:

Create Systems That Fail Well

- 'Ductile Systems'
- then leverage the advantage
that these give you



Multiple Points of Failure

Risk Adjusted Performance:

Returns

Assumed Risk (Risk Capital)

- Business Lines are responsible for Returns
- Business Lines are best placed to be responsible for Assumed Risk, too



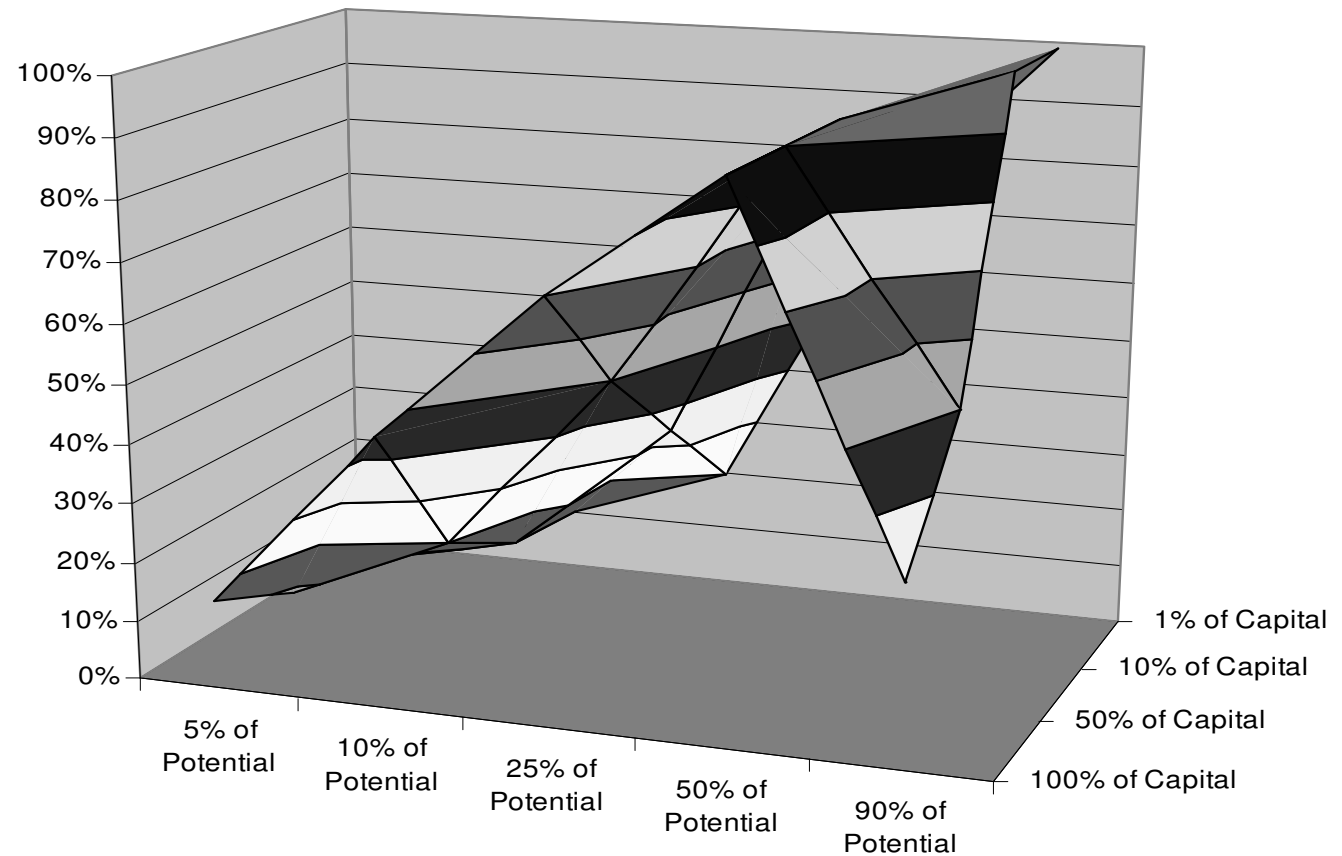
Multiple Points of Failure

- Risk Oversight - Still Absolutely Necessary
- Education as a Driver to Multiple Points of Failure
- Risk Managers Should Primarily be Educators - that's new
 - Empowering the Business Lines



Multiple Points of Failure

The Path of a Problem



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The Path to a Problem:

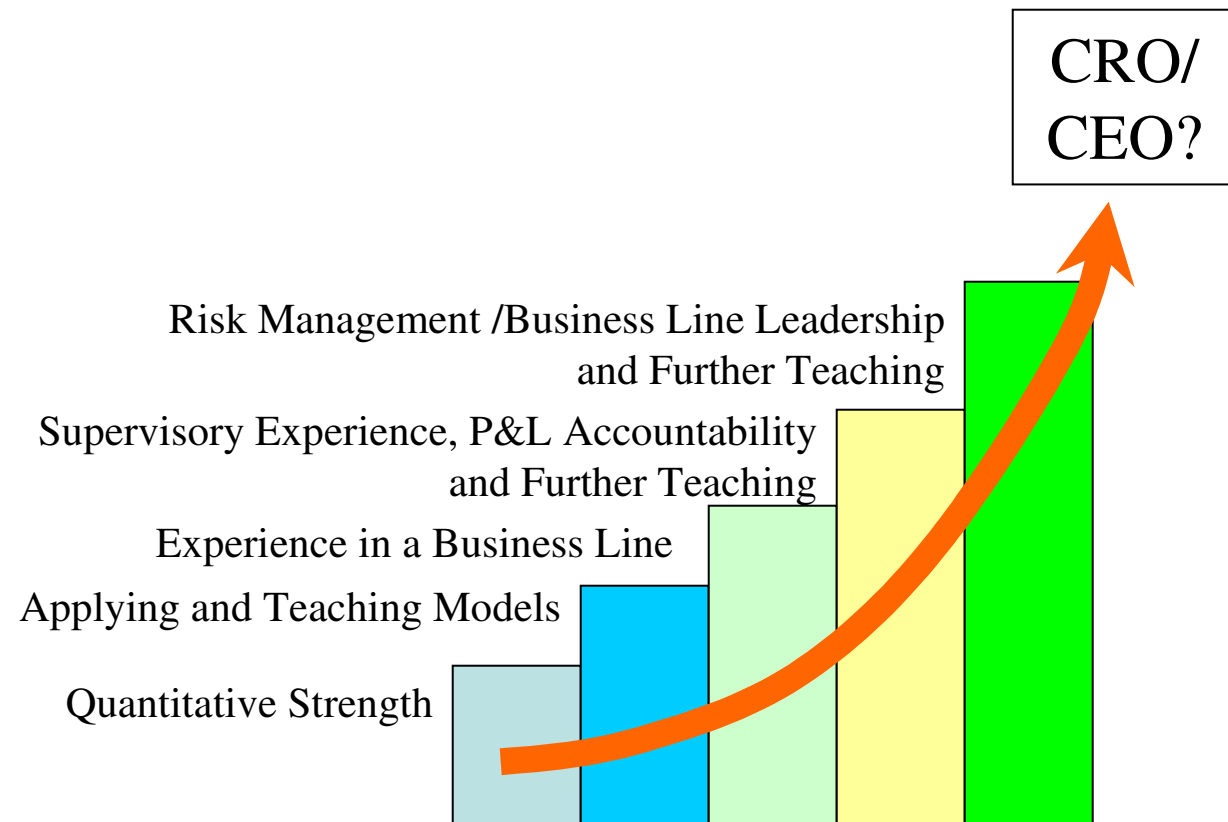
Probability that Problem is Halted at

| Potential Value of Problem | 5% of Potential | 10% of Potential | 25% of Potential | 50% of Potential | 90% of Potential |
|-------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
| 100% of Capital | 15% | 45% | 70% | 90% | 30% |
| 50% of Capital | 8% | 20% | 50% | 90% | 50% |
| 10% of Capital | 6% | 12% | 35% | 90% | 99% |
| 1% of Capital | 5% | 10% | 20% | 70% | 99% |

- Risk Managers Cannot Be Everywhere that Risk is Created - Thus the Focus on Education



Building Blocks of an RM Leader



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Adding Value to the Firm

- Risk Management in the Planning Process
- Risk Management as a Decision Science
 - Risk Capital Allocation
 - RAROC, RORAC
 - Economic Profit
 - Basel II



Successful Outcomes

- Enterprise Buy-In
- More Diversified Knowledge of Risk Management
- Multiple Points of Failure
- Enhanced Firm Value



Conclusion

Thank you!

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