

## **RISK MANAGEMENT FRONTIERS: DEMYSTIFIED**

By

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### ***Abstract***

The New Frontiers of Risk study attempts to understand the perceptions relating to market, operational and political risk. Market risk factor framework allows business houses to evaluate risks generated by asset allocation, manager selection and overlay decisions. Risk managers need to focus not only on market risk, but increasingly on operational and political risks. Mitigating operational risk is slated to play an increasingly critical role in lowering a plan's overall risk profile. As operational risks are inherent in all business processes, it is crucial for executive management to approach operational risk proactively from the top down and drive the process to achieve successful operational risk management. With risk awareness increasing in all risk categories, the resources allocated to proper research and evaluation of political risk will also substantially increase, helping to mitigate potential political risk exposure for pension funds and nonprofits. We are challenged to create new methods for understanding and identifying risk and for new Risk Management processes.

This paper brings out in a nutshell, the new frontiers of risk, its best practices, Deterministic to Stochastic approach adopted by Actuaries, Risk Management Practices and certain big Frontiers of risk management.

### **I New Frontiers of Risk**

It would be a void if we do not start the topic with the essence of the paper titled "*New Frontiers of Risk - The 360° Risk Manager*", which is the culmination of many months of research and analysis and heralds the dawning of a new age in the science of risk management. New Frontiers of Risk include the following points:

- A new standard for risk managers has been set. Risk managers need to focus not only on market risk, but increasingly on operational and political risks.
- Operational and political risks occupy on average forty percent of the time business houses spend on risk management.
- Under-funding of pension funds is widespread.
- In search of higher investment returns and risk mitigation, business houses have increased their allocations to alternative assets.

- New non-domestic equity allocations in markets in developed nations are expected to slow down over the next five years.
- Mitigating operational risk is slated to play an increasingly critical role in lowering a plan's overall risk profile.
- Pensions and nonprofits are relying more heavily on third party

The above study reports the results of a survey of the risk concerns and risk-control practices of seventy six institutional investors of various types, sizes and locations. The survey divided risk into three broad categories: Market, Operational and Political. Institutional investors remain more concerned with market risk than with operational or political risks, although their concern with the latter two has increased over time. Under the heading of market risk, the chief concern is with asset allocation. Many use some form of asset liability analysis. Operational risk needs to be controlled along the new frontier as well as the old frontier. The New Frontiers of Risk study attempts to understand the perceptions relating to market, operational and political risk.

### **Market risk**

Market risk is the exposure to variation in asset returns or values that result from changes in systematic risk factors. While operational and political risk can affect portfolio performance at particular times, market risks are present more or less continuously, making them more amenable to frequent measurement, monitoring and mitigation. In particular, interest rate, sector, fundamental and currency exposures create a common language that can be used to measure and describe risk at all levels of the fund. This risk factor framework allows business houses to evaluate risks generated by asset allocation, manager selection and overlay decisions. It also provides a basis for compliance structures to support operational and political risks, such as tracking error targets, duration, credit quality analysis or sector concentration.

### **Operational Risk**

Operational risk is the risk of loss resulting from inadequate or failed internal processes, systems and other factors, or from external events. These can range from large-scale corporate accounting fraud to everyday occurrences, such as employee errors, systems downtime and the loss of key talent. For plan sponsors, operational risk covers a wide range of concerns that can affect the process of making investment decisions.

Market risk has long been studied and quantified. Operational risk is a thornier issue and there is no clearly established method for measuring operational risk on an organization-wide basis. Records

can be kept and used to identify mistakes to make determining the operational risk. In certain cases, there is not enough reliable data to apply statistical approaches to assess risk. For critical risk factors, such as internal leadership and a culture of integrity, which cannot be measured statistically, modeling techniques that can accommodate a combination of data and expert input are better suited. As operational risk management evolves into a unique discipline, advanced analysis and reporting are required to quantify risk levels and focus on mitigation efforts. In exploring the operational risks, two in particular emerged as major concerns: headline and service-level risks.

**Headline risk** is the exposure to a negative news story broadcast to millions without prior warning. Regardless of its accuracy or integrity, in a matter of seconds one negative news story can damage a reputation that has taken many long years to build. This type of risk operates not only on an organizational level, but also at an individual level.

**Service-level risk** manifests itself in the failure to achieve prescribed service goals and can result in lost revenue, damaged image, strained customer relationships and weakened competitive advantage. One way to manage service-level risk is by drawing up a Service Level Description (SLD) with external providers (e.g. portfolio managers, actuaries, consultants and custodians) to delineate performance levels and service expectations.

The most essential element in mitigating operational risk is effective senior leadership. As operational risks are inherent in all business processes, it is crucial for executive management to approach operational risk proactively from the top down and drive the process to achieve successful operational risk management.

Another notable area of global operational risk concern is the accelerating trend of outsourcing and off-shoring, which present a double-edged sword for risk control. Outsourcing and off-shoring to other countries can increase other operational risks, such as fraud or compromised intellectual property security. Operational risk is poised to play an expanding role in the effective management of corporate, public and nonprofit funds and is changing the role of the plan sponsor.

### **Political Risk**

Political risk is the exposure to loss resulting from political processes or events, including but not limited to legislative change, contract failure, political violence, expropriation, corruption and war. For pension funds and nonprofits, political risks could be considered as having the characteristics of extreme events: infrequent, of uncertain outcome and impacting the fund indirectly through the assets held. As such, plan sponsors traditionally treat political risks as uniquely diversifiable and delegate these types of concerns to their asset managers, but a top-level reassessment is needed.

With a large number of currently under-funded plans and the general clamor for improved governance in public institutions, pension reforms are already underway. As political decisions are made based on the long-term interests of the country, governments are imposing long-term regulatory structures for pension funds, which will continue to pose political risks to plan sponsors.

The recent legislative directives include *Basel II*, a revised financial standards framework that recommends financial institutions employ quantitative techniques to assess and manage operational risk and institute capital requirements to cover operational loss.

Political risk measurement primarily serves organizations interested in establishing business opportunities in foreign markets. Risk management consultants rate countries with respect to macro-economic variables, such as GDP, exchange rate volatility, inflation and rate of unemployment, with the overall political rating formulated around less easily measured variables like corruption, ethnic tension and government stability. With risk awareness increasing in all risk categories, the resources allocated to proper research and evaluation of political risk will also substantially increase, helping to mitigate potential political risk exposure for pension funds and nonprofits.

**Checklist of Best Practices for New Frontiers of Risk**

<b>Market Risk</b>	<b>Operating Risk</b>	<b>Political Risk</b>
Rebalance to Maximize Your Asset Allocation Strategy	Categorize Operational Risks as Either "High Frequency, Low Impact" or "Low Frequency, High Impact"	Study Macro-Economic Trends to Get a Sense of Future Political Risk
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Examine the Expanding Universe of Investable Assets	Eliminate the Potential for Fraud by Instilling a Culture of Integrity	Prepare to Comply with New Legislative Changes
Review Allocations in Developed Foreign Equity Markets	Transfer Operational Risk to Insurance Companies and the Capital Markets	Determine if Socially Responsible Investing is an Issue
Monitor Portfolio Managers Relative to Mandates	Thwart the Two Biggest Operational Risks: Headline and Service-Level	Develop an "Approved Countries" List for Investments
Develop Quantitative Models to Measure Market Risk		

## **II Actuarial Scenario from Deterministic to Stochastic approach**

The Actuarial world, applying algorithmic methods, projects a single-point estimate of future liabilities from a set of existing data. These methods, known as deterministic, can be applied with combinations of assumptions to produce a range of reasonable estimates from which the actuary would select the best estimate. Determination of reasonability is a subjective process and is influenced by a host of non-scientific factor. Unfortunately, no range of estimates can account for every possible outcome. While based on sound reasoning, the uses of a range to define future uncertainties can be misleading. While all methods and models assume that historic performance is a guide to future behavior, traditional deterministic methods often obscure assumptions about the future by focusing exclusively on the past.

Actuaries depend more on mathematical models for capturing organic nature of real-world loss information. Stochastic models seek to represent how losses could emerge and develop in the future. When applied, the stochastic models prove beyond the deterministic algorithms of traditional methods and lead access to more information on the liability estimates. Not to undermine the continuity of deterministic methods for producing range of reasonable estimates, the information-rich stochastic environment requires development of a model that captures the statistical features of the data that leads to the best estimate of all possible outcomes.

Bootstrapping, one kind of stochastic model, is a tried and true model that looks to the dynamic nature of the data as the basis for simulations that generate a realistic distribution of outcomes. It demonstrates the strengths, adaptability and utility of this approach. With respect to loss liability estimates, bootstrapping provides information about the risk profile of a specific claims portfolio while allowing for other uses of the information, beyond just setting reserves.

The actuarial profession is moving toward a better statistical description of real-world behavior. While opining about what is reasonable simply in terms of certain assumptions and data will always be an important function, new information is likely to influence the direction or expand the scope of the actuary's role.

## **III New Frontiers of Risk Management Practices**

Risk is normally referred to mean an uncertainty regarding loss and is constantly changing in our post industrial age. We are moving to more and more of a service economy; intangibles are now estimated to account for over thirty percent of business net worth. In the geopolitical context, the answer lies in the undiscovered and the unknown. We are at new frontiers in identifying, managing,

assuming and transferring risk. It is time for Risk Managers to take the mantle of leadership and join the Creative Class. As we know, insurance has become unreliable, uncollectable and inconsistent. We are challenged to create new methods for understanding and identifying risk and for new Risk Management processes. Following are some of the Risk Management Practices and Innovative Practices.

**a) Risk Management Practices**

- Scenario Planning
- Risk Mapping
- Simulation Exercises
- Crisis Management Planning
- Disaster Recovery Planning
- Knowledge Management Systems

**b) Innovative Practices**

- Advanced Brainstorming
- Facilitation that respects Divergence
- Improvisational Practices
- Group Decision Making Processes
- Customer Insight and Feedback Loops
- Customer Ethnography Studies
- Open Communication Systems

**IV Big Frontiers of risk management**

The corporate world is increasingly look to internal control and risk management to give calm and reassurance. These fields are so young, so chaotic, so muddled, and churning with change that they remind me of the Wild West. Following may be the next big frontiers.

- **More controls design and less audit & remediation**

The war between the quality movement and the internal controls movement is gradually gaining ground. This trend has something to do with change in employment from manufacturing towards services, and financial services in particular. Although the internal control perspective has the advantage of risk thinking and explicit consideration of fraud risks, it is still far behind the quality movement on measurement and design engineering.

- **Corporate risk management getting closer to internal control**

Risk managers and internal controls managers tend to have different backgrounds and preoccupations. Risk managers tend to be concerned with big, non-recurring risk events and often have insurance or engineering backgrounds. The trend is towards documenting risks and controls in detail and using confirmations and self assessment to make sure every last control is complied with all the time.

- **Better quantification**

As organisations spend more and more on internal controls they reach a point where intuition is no longer enough and reassurances that the work is worthwhile need to be backed up with facts.

- **Behaviour change beyond risk registers**

The objectives of a risk register are to have better risk management and to confirm by the risk to control mapping that the main risks are covered. When risk managers begin introducing risk management systems in an organization, they often get involved with initiatives to improve controls, such as injecting risk assessments into projects, working out procedures for business case approval, and developing policies for resilient sourcing.

- **Risk management that targets psychological factors**

The psychology of uncertainty leads to bad planning and decisions. This is something people find very interesting and everyone can think of examples from their own experiences of occasions when someone suppressed uncertainty about something, usually with unfortunate results.

- **Risk and performance management merging through a causal model**

Risk register and scorecard depicting major goals and measures of progress to be compared for the similarity. Risk analyses are very often driven from statements of objectives. Measures of performance should be based on a causal model of how the organisation and its environment work. One way of building a risk model would be to derive it directly from one of these causal models.

- **Technical risk register reforms**

Items on a risk register are single risks. Always there are sets of risks. There are many simple ways to improve risk registers.

## Conclusion

The importance of proper risk management and the consequences of failure to have it in place have never been greater. There will be a greater expectation on business houses to work out for themselves how to satisfy their regulatory obligations, and they will have less certainty that they are doing so. Good risk management can help to reduce the uncertainty, and provide a road map for senior management on the key areas that require greater attention. Business houses that do this well will enjoy a regulatory dividend - less attention and scrutiny. Those that have poor risk management will endure more intrusive regulatory examination. Risk management is not just about satisfying minimum regulatory compliance, but is also at the heart of more effective and efficient business management.

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