

# Reinventing Risk Management

Modern ERM -The New Risk Management Paradigm

Products and Services

## OUR PERSPECTIVE

# WHY DOES RISK MANAGEMENT NEED TO BE REINVENTED?

The 2008 global financial crisis has revealed the need for a paradigm shift in risk management practices.

### IN THE FINANCIAL SERVICES INDUSTRY

- Traditional economic capital models systematically underestimate risk because they do not adequately incorporate the impact of rare (tail) events – evidenced by the fact that “one in a hundred year” events seem to occur every 10-15 years.
- Most risk models cannot combine hard data, soft data and expert opinion in an objective, transparent and theoretically valid manner.
- Biased models create “risk-reward arbitrage” opportunities, allowing unethical managers to deliberately engage in high-risk activities while appearing to operate within stakeholder risk tolerances.
- Because performance is generally benchmarked against peers, irresponsible behavior at one organization can lead to a “follow the herd mentality” and cause an industry trend (i.e., systemic risk).
- Many senior officers and corporate board members do not have a strong knowledge of risk management and often just assume that risk is being managed appropriately.

### IN THE BROADER CORPORATE UNIVERSE

- Traditional Enterprise Risk Management (ERM) and Governance Risk and Compliance (GRC) frameworks view risk as the probability of a loss. Under this view, risk management is synonymous with risk control.
- Risk management actually means factoring risk into strategic and tactical business decisions, but this is not feasible under a traditional ERM or GRC approach.
- Traditional ERM and GRC approaches do not provide risk metrics that facilitate risk-reward or risk-control optimization.
- Many traditional ERM and GRC efforts fail to establish a viable risk taxonomy. As a result they do not distinguish between and among causes, events and effects. This not only creates confusion, it also obscures the root causes of the most significant losses.

### ADOPTING A MODERN ERM FRAMEWORK WILL ALLOW ORGANIZATIONS TO ACCOMPLISH THE FOLLOWING

- Facilitate the holistic management of all risks across the enterprise, based on a consistent definition of risk and a comprehensive risk architecture/ taxonomy.
- Accurately incorporate the impact of rare (tail) events into risk measures and risk-based profitability metrics.
- Embed a risk culture that reflects and harmonizes the goals of key decision makers and external stakeholders.
- Create a structured and transparent process for factoring risk into the business decision-making process — at both a tactical and strategic level. Specifically, provide managers, senior managers and C-level executives the tools and information they need to optimize risk-reward, risk-control and risk-transfer in the context of cost-benefit analysis.
- Reduce information asymmetries between managers and stakeholders to help confirm that managers are pursuing strategies that conform to the risk tolerance standards of the stakeholders.

Our truly holistic approach addresses the weakness in existing frameworks and meets the core requirements of C-level staff across all industries.

## OUR PRODUCTS AND SERVICES

We offer a unique set of Modern ERM products and services. To help explain the key characteristics of Modern ERM as well as its advantages over traditional methods we conduct public and private educational seminars. To assist companies implement Modern ERM we provide a range of advisory and consulting services. And after many years of research and development we are pleased to announce a unique set of software products that make implementing Modern ERM a practical reality.

### **Business Decision Analyzer**

The Business Decision Analyzer (BDA) allows managers to assess the feasibility of business propositions on a risk-adjusted basis. Specifically, this tool allows managers to conduct risk-reward, risk-control and risk-transfer optimization at the tolerance level of the stakeholders after factoring the total cost of risk into profitability analysis.

The BDA can be used to analyze the feasibility of new business opportunities (risk-reward optimization) as well as investments in risk mitigation (risk-control optimization) and insurance (risk-transfer optimization). Its many innovative features include the ability to incorporate hard data, soft data and/or “expert opinion” in a theoretically valid manner. The advanced version can be used to model multiple risks simultaneously over a multi-year period under varying business assumptions (e.g., cash flow, insurance value).

The BDA also includes a newly developed ultra high speed Monte Carlo simulation engine that can produce virtually instantaneous results. This makes the BDA ideal for real-time use in strategic planning and related business applications. The risk management function can also use the BDA to confirm that risk is being managed in conformity with the risk tolerance standards of the stakeholders or to uncover potential evidence of “principal-agent” risk.

### **Model Researcher**

The Model Researcher allows a quantitative analyst to conduct advanced research in actuarial science – for use in modeling all risks across the enterprise – without any knowledge of software programming. It features an intuitive and user-friendly GUI and a comprehensive set of command functions. This allows users to generate multiple loss data sets from a variety of frequency and severity distributions as well as fit the resulting data to a range of probability distributions using advanced distribution fitting techniques modified to accommodate censored data (i.e., where a portion of the data is not reported). Comprehensive statistical and graphical analysis functionality is also included. The tool also allows users to conduct “scenario analysis.”

### **Stress Economic Capital Assessor**

The Stress Economic Capital Assessor (Stress EC Assessor) is the industry's first tool for measuring market and credit risk where the full impact of the rare (tail) events can be incorporated into economic capital. The underlying methodology is actuarial science theory; however, this tool is based on an entirely new application of actuarial theory. Unlike many existing Value at Risk models, this tool produces results that are expressed as annualized loss exceedence values, e.g., a one-day decline in stock prices of 15% will take place once every year (on average).

By expressing results in this manner the Stress EC Assessor helps answer many important risk questions, for example, what is the chance of my losing 40% of my portfolio value in any ten-day period over the next five years. It is also much easier for C-level executives and corporate board officers to understand the results as well as the business assumptions upon which their models are based.

In addition, the Stress EC Assessor is the first economic capital model that can be used to conduct practical “what if” scenario analysis which describes stress scenarios in terms of both frequency and severity, e.g., suppose a 10%+ one-day decline in stock prices is expected to take place once every fifteen years, what does that imply about the true 99% level exposure on an annualized basis. The tool is so user friendly it can be used by senior executives who have very little knowledge of advanced modeling techniques.

### **OpRisk Modeler**

The OpRisk Modeler allows a user to model operational risk on a stand-alone basis. It includes all the features of the Model Researcher as well as many methodological features specific to operational risk modeling, such as trending annualized frequency parameters and combining internal and external consortium data through proportionality. It also includes a robust method of incorporating information from external public loss data.

## OUR MISSION

*A key goal of risk management is to create a transparent process to ensure that business decisions are made within the risk tolerance standards of the stakeholders.*

Stamford Risk Analytics has a unique mission. Our goal is to help our clients – across all industries – understand the benefits of Modern ERM and to assist them in adopting this holistic approach to managing risk. Modern ERM addresses the most important risk management business problems. It is currently the only risk management framework that is based on a uniform definition of risk, an intuitive and consistent risk taxonomy and an integrated measurement-management methodology.

The firm is headed by globally recognized thought leader, Ali Samad-Khan. His provocative articles and white papers have served as a catalyst for change in the way organizations manage risk. For his pioneering work, he was named “one of the 100 most influential people in finance” by Treasury & Risk Management magazine.

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