Jay Chavez
Risk Modeling
Risk Assessment in Practice

In the paper "Risk Assessment in Practice" Dr. Patchin Curtis and Mr. Mark Carey contend that risk adds value to an organization. For this reason, risk is not to be eliminated or reduced to a minimum, rather, the right amount of risk must be present at all times in order to achieve the firm's strategic objectives. This is the reason why risk assessment is important. The risk assessment process should be, "practical, sustainable, and easy to understand (Patchin & Curtis, 2012)

The risk assessment process

First we must identify the risk before we can proceed with risk assessment. Risk identification usually takes place when an ERM program is originally established, at a periodic ERM review, at the start of a new project, during a merger, acquisition, or divestiture, or during a major restructuring. Once the risks have been identified the risk assessment can take place. Once the assessment has been performed, a response plan can be made. The risk assessment has only four steps, namely, develop assessment criteria, assess the risk, assess risk interactions, and prioritize the risk.

The risk identification process produces a list of risk events and opportunities in four categories, which are, financial risk, operational-risk, strategic-risk, and compliance-risk. The risk events found in these categories will be further segmented into sub-categories assigned by business unit. The result will be a comprehensive list of risk events and opportunities important to business unit managers. In order to decipher the risks that are important to senior management a risk assessment of the identified risks and opportunities is necessary.

Develop Assessment Criteria

The first step in the COSO Risk Assessment involves developing a set of uniform criteria to apply in the risk assessment process. Risk are often measured in terms of likelihood and severity. Additional dimensions must be weighed in such as speed of onset, which addresses the level of agility and responsiveness needed by an organization. Within the process of developing assessment criteria, is the process of developing assessment scales in order to compare the risks to one another. The goal is to differentiate the risk in order to rank the risks and prioritize them. Five point scales deliver a better spread between risks than three point scales. But ten point scales imply a measure of accuracy that might prove ambiguous. For example, what is the difference between a 6 and a 7 level risk…? The article says that the difference between a 6 or a 7 might be inconsequential and may times might be indefensible. Such is the case between a 3 level risk and a 4 level risk. For that reason, five point scales are often preferred. But every industry is different. If your industry is data heavy and precise, such as banking, a ten point or a different scale may be applied.

Assessing Risk

The risk assessment process consists simply of assigning values to each identified risk and opportunity using the newly developed risk criteria.

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Assessing Risk Interactions

When a risk event is triggered it is possible that it will give rise to another risk. There is also the possibility that a particular risk might be exacerbated under unexpected conditions. For that reason, effective risk managers use risk interaction matrices, bow-tie diagrams, and aggregated probability distributions. The risk interaction matrix is the simplest form of risk interaction analysis. This is where risks are matched using columns and rows. A risk correlation matrix can be obtained from a risk interaction matrix if historical data are available that can help us put a numerical figure to the impact of the risk event. Risk diagrams break a complex risk event into its component parts showing the chain of events that could lead to the events result. Fault trees are used to analyze events and even combinations of events. Event trees are used for modeling sequence of events. Finally, the bow-tie diagram combines a fault tree and an event tree. Probabilistic models built on bow-tie diagrams are quit useful for sensitivity analysis and what if scenarios.

Prioritize Risk

Prioritization is simply assigning prioritization values to the identified risks. The key is to use predetermined target risk levels and risk tolerance thresholds. The risk profile is the entire portfolio of risk facing the organization but only key risk that senior management cares about must be reported. For that reason, we use prioritization, reporting risk either in a hierarchy or a heat map. This is usually done in a two-step process. The first step is to rank the risks according to impact multiplied by likelihood or impact multiplied by vulnerability. Then the rank is reviewed in light of impact alone, speed of onset, or the gap between the existing and the desired level of risk, also known as risk appetite. In this step quallitive factors are usually considered.

Organization of risk can take form in a risk hierarchy. This is the simplest way to aggregate risk. In this way risk can be organized by organizational unit, risk type, geography, or strategic objective. Although this system is great for organizing the risk it does little to prioritize it. Another simple way to view the risk portfolio is to create a risk map or a heat map. A heat map has the probability of impact on the Y axis and the impact on the X axis. With a heat map, the risk is not only organized but prioritization is simple and clearly visual. A third way to report the risk portfolio for prioritization is a MARCI chart. MARCI stands for mitigate, assure, redeploy, and cumulative impact. A MARCI chart acts like a heat map and it is especially useful for risk response.

Risk Response

The process of risk assessment leads to risk response. The usual responses to potential risks are to retain, reduce, share, or avoid the risks. To arrive at these decisions cost-benefit analysis is performed, then a response strategy is formulated, and a risk response plan is put in place.