Analysis of Risk Management Tools To Improve Decision Making

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Corporate Environmental Management Models
Track 2-4

Abstract

With the ever increasing burden of country specific regulatory, voluntary industry and/or business to business requirements as well as the rapidly expanding societal expectations that companies manage risks of their products and processes, it has become imperative that business processes need to be modified to include risk assessment and where appropriate risk management considerations. The newer concepts of extended producer or product responsibilities offer some additional challenges, especially in a truly global economy. The ability to ensure that decisions made relevant to a single life cycle stage (e.g., manufacturing, use or end of life) or to a single environmental media (e.g., air, water, or land), do not create unexpected or unanticipated risks in another life cycle stage of media is being recognized more by decision and policy makers.

We will discuss the idea that risk assessments and risk management and the closely related decision processes are two distinct functions. Specifically risk assessment activities, processes and tool sets are often developed, tested and owned by technical specialists. Business managers typically own risk management decisions and processes designed to mitigate identified risk factors. A good risk assessment process should not only identify and where possible quantify various risk factors, but also recommend action plans, which might be considered to manage identified risks. Business decisions to proceed are usually based on an assessment that the identified risks can be controlled within acceptable parameters. A list of possible parameters might include that customer behavior can be altered if this is a risk factor, or that appropriate governmental assurances or approvals can be obtained, or that the local investment climate is acceptable, or that the local talent pool is adequate. In the final analysis, management needs to weigh whether the decision to proceed is consistent with the specific strategic intent of the business and that the potential benefit vs. risk equation is acceptable.

Various risk assessment tools are available for a wide array of business and technology issues. A process will be proposed to assure that these assessments are reasonably consistent and of acceptable quality. A variety of specific tools will reviewed, as well as suggestions when a particular set of tools might be more appropriate to use. These tool
sets will include checklists, qualitative and quantitative risk assessments, and methodologies such as Life Cycle Assessments, Total Cost of Ownership, eco-efficiency evaluations and others.

We will also discuss typical business processes (such as capital acquisition, product design and development, procurement, and marketing) and look at how these tools might have been used historically and propose ways that their use can be enhanced to reduce the risks to the business, human health and the environment on a global perspective.

Key Words: Risk Assessment, Risk Management, Life Cycle Assessment, Total Cost of Ownership,