Understanding the return on health, safety and environmental investments

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Abstract

Introduction: Traditionally, health safety and environmental (HS & E) investments have been viewed as expensive but necessary. HS & E professionals had a difficult task of providing data showing that these investments can also contribute to business success. An ORC task force developed a way for traditional financial analysis methods to be applied to HS & E investments and decisions. Method: The result of the task force effort is the software called the ORC Return on Health, Safety and Environmental Investments (ROHSEI), a supporting tool to provide a comprehensive look at health, safety or environmental investment projects and their potential financial impacts. Results: Since its development, more than 200 companies, government agencies, and educational institutions have been trained in the ROHSEI process and software. Conclusion: HS & E professionals who are able to evaluate and communicate the business value of health, safety and environmental efforts will improve understanding of the impacts HS & E projects and contribute to better decision making by their organizations.

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1. Introduction

In today’s fast-paced and competitive environment, all components of business organizations are being asked to demonstrate their value to the organization. Traditionally, health, safety and environmental (HS & E) investments have been looked upon as being expensive, but necessary to avoid costly government citations. Therefore, improvements or innovations in health, safety and environmental beyond what is necessary to meet compliance obligations were often delayed and actual business benefits of expenditures for HS & E were not examined. Others have resisted the notion of using financial metrics in connection with HS & E decision-making, feeling that business operational decisions would always take priority over proactive or innovative HS & E projects. Still others (especially those in the HS & E professions) who have had little or no formal training in the process of making a business case for HS & E, found the financial terms confusing or feared that the estimates they developed would not be based on analyses sufficiently sophisticated to withstand scrutiny by management.

In the mid-1990’s, however, a task force of 15 ORC Worldwide Occupational Safety and Health Group member companies set themselves to the task of developing a way for traditional financial analysis methods to be applied to HS & E investments and decisions. The result is the process and software called the ORC Return on Health, Safety and Environmental Investments or ROHSEI.

2. Method

ROHSEI is a process and supporting tool set developed for use by occupational health, safety and environmental professionals and others to provide a comprehensive look at investment decisions and to answer important questions, such as:

- What health and safety or environmental investments should we make?
- When should we make a particular investment?
The ROHSEI process facilitates a team approach to understanding and translates these seemingly unrelated sets of metrics and toward promoting investment decisions that reflect a more complete understanding of the impacts both on an organization’s health, safety and environmental goals as well as on its business and financial goals. ROHSEI helps improve HS & E performance by helping organizations make better decisions and by helping HS & E to become integrated into an organization’s business process.

4. The ROHSEI process

ROHSEI is a four-step process that guides the HS & E professional in building and communicating a business case for addressing virtually any type of safety, health or environmental project.

The four steps are:

1. Understand the Opportunity or Challenge
2. Identify and Explore Alternative Solutions
3. Gather Data and Conduct Analysis
4. Make a Recommendation

4.1. Understanding the opportunity or challenge

Investments are always made for some purpose: to increase revenues, to decrease costs, to improve productivity, to reduce injuries, to comply with regulations, and so forth. An important starting point for all individuals involved with developing a business case, whether brainstorming alternatives, gathering data, making assumptions, formulating recommendations, or making decisions, is to have a solid understanding of the objectives, requirements, and constraints of the investment opportunity.

The ROHSEI toolset’s Business Case Summary is used to document the specific definition of the investment opportunity. First, it asks the user to describe the focus of an opportunity or challenge. That is, what is the problem that needs to be addressed? Is the project being conducted to reduce risk, reduce costs, and/or increase revenue? If the purpose includes reducing risk, it allows the user to describe the current risk level and explain why this level is unacceptable. Typical examples of opportunities or challenges that HS & E managers might want to conduct a ROHSEI analysis for are: (a) determining the business value of buying newer, faster, safer process equipment versus continuing with existing equipment but upgrading the company’s personal protective equipment program and increasing employee hazard avoidance training; (b) determining whether to increase staff to take over a short term disability case management function in-house versus use of an external contractor; and (c) determining whether to design and make changes to reduce risk factors in an operation despite the fact that few employee complaints have been received and no employee injuries have been recorded.

4.2. Identifying and exploring alternative solutions

In this step, ROHSEI users define the current situation and document their immediate ideas for responding to the opportunity or challenge presented. The analysis team (although ROHSEI can be used by individuals, it is recommended that more than one person participate) is encouraged to brainstorm beyond these initial ideas to ensure that all reasonable alternatives are reviewed. The brainstorming activity may also spark innovative ideas about alternatives that "push the envelope" of current approaches.

The analysis team prioritizes the alternatives to be evaluated, based on the ability of each alternative to address the objectives, requirements, and constraints of the oppor-
tunity. Examples of questions the team should address during this phase are: Does this opportunity fit within the company’s or group’s business strategy; what are the requirements and constraints that must be met by the investment alternative to pursue the opportunity; and what factors will influence a reviewer’s decision. Once a reasonable set of alternative investment scenarios is developed, each is documented in Step 2 of the Business Case Summary tool.

4.3. Gather data and conduct analysis

The next step is to encourage the analysis team to develop a comprehensive view of how each of the alternative investments impacts business performance. Specifically, the process facilitates the consideration of both the direct and hidden benefits, as well as direct and hidden costs of each investment alternative. Direct impacts are defined as those impacts that are easily quantified and clearly observable, such as health and safety personnel time, production downtime, loss of raw materials, and health and safety capital. The direct impacts module contains a number of parameters that can be considered, such as:

- Operational personnel time
- Health and safety personnel time
- Design and engineering time
- Vendors, consultants, and contract labor expenses
- Health and safety operations capital
- Production downtime
- Fine and penalties
- Legal fees, workers’ compensation and settlements
- Medical costs and insurance
- Property damage insurance
- Long term disability
- Material substitution
- Material recovery

Not all of the parameters need be examined for each analysis and the software tools allow a company to add some additional parameters customized to company needs.

Analysis of these impacts results in metrics such as Net Present Value, Return on Investment, Internal Rate of Return, and Discounted Payback Period.

Hidden impacts are defined as those health and safety impacts on business performance that are hard to observe and to quantify. The “hidden impacts module” includes a structured questionnaire and decision matrix process to enable the analysis team to assess the more indirect impacts on worker productivity, product quality, and customer satisfaction associated with each alternative. At the completion of the analysis of the direct and hidden impacts, decision makers will have both quantified financial and business metrics, as well as semi-quantitative rankings of key business impacts, to evaluate and to compare each of the alternatives.

4.4. Make a recommendation

After data have been gathered and analyzed, the analysis team should evaluate the degree to which each investment alternative meets the requirements and constraints that were identified during the analysis. The learning and metrics that have developed through use of the ROHSEI process and its tools should contribute to an investment decision that considers additional criteria. Investments, however, should also support the company’s environmental, health and safety strategy, the company’s business strategy, and the business case reviewer’s priorities. Furthermore, an explicit discussion about how the company and business unit manage environmental, health and safety risk should take place to ensure that investment decisions do not arbitrarily assume a “risk neutral” position.

5. Results


Since that time, more than 200 companies, government agencies, and educational institutions have sent representatives to be trained in the ROHSEI process. Companies have used ROHSEI to: (a) determine whether to provide on-site health care clinics (to handle non-occupational related health matters) for workers; (b) determine whether to use respirators or mechanical ventilation systems to prevent exposure to toxic substances in the workplace; (c) assess the benefit of making ergonomic design changes; (d) determine whether to install sprinkler systems versus relying on an on-site fire brigade (outside U.S.); (e) determine the components of a motor-vehicle safety program; (f) determine the veracity of a vendor’s claim that its program for recycling of disposable protective clothing "pays for itself;" (g) justify HS & E staffing levels; (h) valuate process safety management program costs, and many others. Vendors have used ROHSEI to demonstrate the financial impacts of using their services or products. Insurance companies have used ROHSEI to demonstrate the financial effects of recommended health and safety investments to their clients.

6. Conclusions

The key to success in using ROHSEI requires users to think about HS & E investments in a new and more
complete way. Industry users have found the following factors important for success:

- Training—Potential users must know how and when to use ROHSEI
- Leadership—Management support and incentives for the use of ROHSEI
- Integration—ROHSEI should become a part of your investment decision-making procedures and tools.
- Communication—Disseminate lessons learned and success stories achieved through using ROHSEI. HS & E professionals who are able to coordinate these efforts will find that ROHSEI will bring value to their organization.

7. ROHSEI system and hardware requirements

The ROHSEI software tools are a Microsoft Access-based application. It is supported for use on the following operating systems: Windows NT 4.0 SP6, Windows 2000, Windows XP. (You may attempt to install and run the ROHSEI program on Windows 98, 2nd Edition, or Windows ME, but it is not supported. Installation on these platforms has not been tested.) Additional software required: Microsoft Office (Small Business Edition or greater). Screen Resolution: 1024 X 768, small fonts, recommended. Disk space: ~ 50 MB or the application.

8. More information

ROHSEI is available from ORC Worldwide. ORC offers ROSHEI software, training in the use of ROHSEI, and consulting services associated with the implementation of ROHSEI analysis at individual companies.