

Strategy to Demonstrate the Value of Industrial Hygiene

The American Industrial Hygiene Association's (AIHA) mission is to promote healthy and safe environments by advancing the science, principles, practice, and value of Industrial Hygiene. Membership feedback has indicated the struggle of Industrial Hygienists to effectively communicate the value their work brings to business. To address this need, AIHA awarded a contract to EG&G Technical Services, Inc., a division of URS, who engaged **ORC Worldwide** to conduct original research that would identify and quantify links between industrial hygiene investment and business value.

What is the Project Goal?

The goal of this project is to illustrate the "business case" for industrial hygiene programs and activities. To accomplish this goal, a multi-phase research project was funded to develop and test a strategy that enables Industrial Hygiene (IH) professionals to qualitatively and quantitatively analyze the business value of IH activities and programs. The study findings include representative examples of demonstrated IH business value and a strategy that industrial hygienists can use to demonstrate value in terms that resonate with business leaders.

What is an IH Value Proposition?

An IH value proposition is the sum total of benefits that IHs will return to customers for their investments. In making the value proposition, IHs demonstrate to the stakeholders of a business (senior executives, for example) that investing in an occupational hygiene program or hazard control measure will provide a return on that investment in the form of financial and/or other benefits.

Strong value propositions deliver tangible results, such as increased revenues, decreased costs, faster time to market, improved operational efficiency, increased capacity, improved employee morale, decreased employee absenteeism and turnover, higher quality, increased market share, and improved customer retention, to name a few. In addition, value propositions connect the benefit of the project or program with the organization's financial strategy and business objectives.

Why is Demonstrating Value Important?

In today's business environment it is becoming increasingly critical to the survival of the IH profession that a strong value proposition be made to support IH programs and activities so that they can compete successfully for limited resources. Without compelling business value information, management is likely to view IH programs and activities as efforts that, while important, are not as high a priority as projects with a clearer connection to the bottom line. Demonstrating the value of IH will:

- Position industrial hygienists as essential contributors to business and operations teams;
- Help business and operations managers recognize the positive contributions industrial hygienists can make to the bottom line;
- Enable industrial hygienists to better protect worker health; and
- Strengthen the moral argument for "doing the right thing."

Why Has This Work Not Been Embraced Before?

Multiple barriers have existed in the past that have interfered with building a business case for industrial hygiene:

- Business leaders do not understand the scope of the industrial hygiene function and the value it can bring to business;
- Industrial Hygienists lack the tools and practical knowledge to make the business case; and
- The perception exists that the data do not exist to capture IH value.

This study and the resultant strategy will address these barriers.

What Did the Study Find?

A wide range of interventions by industrial hygienists were found to make significant contributions to business and operations. For example, industrial hygienists have worked to:

- Eliminate lead from a raw material stream that saved tens of thousands of dollars in operating costs and kept a facility from closing;
- Substitute a less toxic material for a chromate primer that saved an aircraft company nearly a half-million dollars in processing costs and added capacity to build an additional aircraft each year. This increased this particular revenue stream several million dollars annually;
- Install engineering controls at a small company to control exposure to nano particles that resulted in a ten-fold increase in production capacity; and
- Use contaminant strategies to minimize exposure to potent active pharmaceutical powders that resulted in employee health improvement, reduced personal protective equipment usage, and reduced IH sampling expense. This action also assured regulatory compliance, reduced the need for cleaning, and increased employee productivity.

Each case study explored in the research study illustrated essential contributions to business value that are rarely associated with industrial hygiene. One site visit identified a key industrial process that generates billions in revenue annually that would not exist without the active involvement of the industrial hygienist. A challenge to the profession is to identify and document such critical contributions.

The study also identified the relationship between the IH hierarchy of controls and the value of increasing investments to improve workplace exposures and, subsequently, generate significant financial returns on those investments. In some of the case studies and site visits, the research team observed that as one selects hazard control measures higher in the IH hierarchy of controls, the value to the business increased. In a few cases, recovery of initial investments, the greatest cost savings, and other benefits were found to result from eliminating hazards through engineering controls and through the use of PPE by workers. Other case study results show that with little capital investment, material substitution and containment projects also can have very large pay offs while improving workplace exposures. In short, increased investments in IH when using the hierarchy of controls for guidance have shown to not only be

positive for workers, but often produce a substantial business return.

How Can I Make the Value Case?

After reviewing the literature, analyzing existing cost and financial models, conducting site visits and case studies, and re-examining a decade-long experience in demonstrating value using the ORC ROHSEI financial tool, the research team concluded that the best way to capture the value that IH brings to the business is to use the IH risk reduction process and track its impact on employee health, the industrial hygiene risk management process, and the business process in general. Impacts can be quantifiable in terms of reduced cost, added revenue, or more contributions to key business objectives.

The most important outcome of the study is the development of a strategy for defining the value of IH to business. The AIHA Strategy provides an approach for determining and illustrating the business value of IH programs and activities. The Strategy helps guide the industrial hygienist in developing and presenting a more complete business value proposition.

There are eight steps to the AIHA Strategy:

AIHA Value Strategy	
• Identify Key Business Objectives & IH Hazards	
• Evaluate & Prioritize Value Opportunities	
• Assess Risk Reduction	
• Select Approach of the Value Proposition	
• Identify Changes	
• Assess Impacts	
• Determine Value	
• Present Value Proposition	

Step 1: *The industrial hygienist completes an inventory of work processes and operations, hazards associated with processes, and business objectives.*

Identifying an inventory of business objectives is important to develop a broad perspective of how industrial hygiene programs and activities may contribute to achieving the identified business objectives in the following areas:

- Operations;
- Growth;
- Products and Services;
- Reputational;
- Human Resources;and
- Other.

Hazards also are characterized by their actual or potential business significance. This approach of screening hazards by specific criteria helps industrial hygienists narrow down which IH programs and activities are likely candidates to mitigate the hazard and contribute value to business.

Step 2: *Once the company-specific business objectives inventory is built in Step 1, the IH is asked to evaluate how the IH program or activity under consideration influences those business objectives. The industrial hygienist begins to identify and prioritize value opportunities for further evaluation.*

By thoroughly considering each business objective, workplace hazard and risk present, and control measure options, the industrial hygienist begins to identify and prioritize value opportunities. While this analysis can be completed by the industrial hygienist alone, it is recommended that a small, crossfunctional team of internal stakeholders work together to complete the influence ratings. The industrial hygienist begins to build a consensus that demonstrates that investments in IH will contribute to the reduction of risk to workers and operations while contributing financial and other benefits to the organization.

Step 3: *The industrial hygienist identifies the actual or predicted risk reduction(s) associated with the implementation of an industrial hygiene program, activity or intervention.*

The risk reduction(s) are part of the overall IH value proposition. The industrial hygienist conducts a pre-intervention, baseline risk assessment and follows up with a post-intervention risk assessment. The Strategy references two risk assessment methods. The first risk assessment method is described in the AIHA publication “A Strategy for Assessing and Managing Occupational Exposures”, Third Edition. A second risk assessment method referenced is the general risk assessment method contained in American National Standard Institute/American Industrial Hygiene Association Z10-2005, Occupational Health and Safety Management System. In subsequent steps of the Strategy, other changes, impacts and benefits associated with risk reduction are identified and incorporated into the value proposition.

Step 4: *The industrial hygienist evaluates the data (cost, performance, quality) available related to an industrial hygiene program or activity or intervention and determines if the value proposition is best made using a qualitative approach, a quantitative approach or a combination of both.*

The AIHA Value Strategy splits into two paths at this point, either a qualitative path or quantitative path. The strategy guides the industrial hygienist in choosing between qualitative or quantitative approaches. Important considerations include:

- The level of leadership scrutiny and likelihood of project challenge;
- Risk perception;
- Compliance status;
- Company policy on financial justifications; and
- Time available to collect supporting data.

In general, the industrial hygienist should make every effort to be as detailed as possible in defining the financial costs and benefits of the IH program, activity or intervention. The Strategy is flexible in that the industrial hygienist may follow either the qualitative or quantitative path or choose to conduct the analyses contained in both paths and combine the analyses when making a final value determination and value presentation.

Step 5: *Following selection of the qualitative or quantitative approach, the industrial hygienist next identifies the real or*

anticipated changes resulting from implementation of the IH program.

The intent of this step is to simply identify proposed changes. The magnitude of each change is measured in step 6. In both the qualitative and quantitative approaches, changes are categorized into three areas:

- Health status;
- The IH risk management process; and
- The business process.

Identification of changes in these three areas helps to understand and build the value proposition for the IH program, activity, or intervention.

In terms of changes in Health Status, the industrial hygienist identifies changes in mortality, morbidity (lost time, restricted and medical treatment cases) and other employee health or functionality changes such as employee stress, absenteeism or other factors.

The second change category is change in IH Risk Management Processes. The Strategy prompts the industrial hygienist to look at whether or not there were changes in overall IH duties and responsibilities, administrative load/recordkeeping, management of hierarchy of controls, management of monitoring/ medical surveillance and other IH risk management processes.

The third category for change is Business Process. Specific areas of change within this category include changes in process design, changes to inputs/equipment/materials, changes in how the process is managed, changes in process flow and pace, other business process changes, and changes in downstream processes. The Strategy allows the industrial hygienist to identify and extract any “confounding factors” that may produce the same result as the IH program or activity.

Step 6: *The industrial hygienist identifies impacts associated with changes in Health Status, the IH Risk Management Process and Business Processes.*

In the quantitative approach, impacts are captured as costs and benefits in dollars. In the qualitative model, impacts are categorized as high, moderate or low and supplemented with explanatory narrative and reasonable cost estimates where available.

It is important in this step to capture as many impacts as possible associated with the changes from IH programs, activities or interventions. Impacts may be positive or negative. From a Health Status viewpoint, impacts may include workers compensation and other costs of illnesses, as well as other impacts such as changes in absenteeism, presenteeism, insurance premiums, labor turnover, medical removal, job transfer, training/ re-training, worker productivity and other factors. Where exact costs are not available, defensible estimates may be used.

For IH Risk Management, impacts are captured in the categories of IH duties and responsibilities, administrative load/recordkeeping, hierarchy of controls, monitoring/medical surveillance and other IH risk management processes. For example, an IH intervention may reduce the need for PPE and

reduce downtime associated with donning and doffing PPE. These cost impacts can often be directly measured or estimated and then entered into the quantitative approach.

From a Business Process point of view, impacts are measured across the previously identified change categories. For example, if an IH intervention reduces or eliminates process steps, productivity improvements in terms of enhanced cycle time and cost savings in terms of reduced labor resource needs can be measured or estimated and entered into the quantitative approach.

Step 7: *The industrial hygienist determines the overall value of the industrial hygiene program, activity or intervention.*

Considerations include the cost of the intervention (investment cost) and net cost savings, new revenue generation and other benefits resulting from the intervention. Results are used to prepare a value presentation in the final step of the Strategy.

Step 8: *The industrial hygienist prepares an executive summary presentation that describes the overall value of the IH program or activity.*

The executive summary presentation is a critical termination of both the underlying quantitative and qualitative approaches within the Overarching IH Value Strategy. It integrates results and offers key components:

- IH Program or Activity Description;
- IH Hazard and Risk Reduction;
- IH Opportunity;
- Changes and Impacts;
- Costs of IH Program or Activity;
- Value Determination and Financial Metrics;
- Net Cost Savings;
- New Revenue;
- Other Benefits; and
- Summary Statement and Recommendations.

Do You Want to Get Credit for Adding Business Value?

Recognition of IH contributions to the business bottom line is essential to empower industrial hygienists to continue to advocate for worker safety and health. The results of this study, the case study findings, and the new AIHA Value Strategy, will provide industrial hygienists with new skills and resources to enable them to perform the value analysis for their activities and programs. They can then start to use the value proposition to support recommendation to protect worker health while demonstrating how this makes a positive contribution to the business bottom line. In this way, industrial hygienists will be recognized for their significant contributions to business goals that have heretofore been ignored.

For information or help on how to conduct a Value analysis contact Elyce Biddle, Steve Newell, Reepa Shroff, or Dee Woodhull at ORC Worldwide, 202-293-2980.