MEASURING ROI

RETURN ON INVESTMENT

IN ENVIRONMENT, HEALTH, AND SAFETY

JACK J. PHILLIPS,
PATRICIA PULLIAM PHILLIPS,
AND
AL PULLIAM

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Scrivener Publishing
100 Cummings Center, Suite 541J
Beverly, MA 01915-6106

Publishers at Scrivener
Martin Scrivener (martin@scrivenerpublishing.com)
Phillip Carmical (pcarmical@scrivenerpublishing.com)

Measuring ROI in Environment, Health, and Safety

A Guide to Evaluating EHS Programs, With Case Studies

Jack J. Phillips, Patricia Pulliam Phillips, and Al Pulliam
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Preface

The Need for this Book: Focus on EHS

If you are part of the workforce, you're directly affected by three important issues: environment, health and safety (EHS). Your employer is concerned about the environment and implements a variety of projects and programs to minimize the organization's impact on it. Leaders are also concerned about your health. The cost of employee healthcare has skyrocketed in the past decade and is greatly impacting the financial health of all types of organizations. And employee safety is no new concern. Maintaining a safe workplace has been a common goal as employers have come to understand that safety is good business.

EHS concerns are often grouped together and managed by one executive. This book is for that executive and his or her entire EHS team, as well as others who support EHS projects, programs and initiatives.

Environmental Issues

Everyday focus on EHS is a relatively recent phenomenon. When global warming first surfaced in the 1980s, it stirred up worldwide debate and concern. However, business leaders resisted the issue, recognizing the extra cost involved in addressing the causes of such a phenomenon. For example, when the United Nations formed the Intergovernmental Panel on Climate Change (IPCC) in 1989, business groups formed their own organizations, the Global Climate Coalition and the Competitive Enterprise Institute,

to counter the issues and the debate about the causes of climate change. While most agreed that climate change was occurring, views differed regarding its origins. Finding solutions was not a priority to the business world at large.

Today, most, if not all, businesses recognize that climate change is an issue. The Global Climate Coalition was disbanded in 2002, and most businesses are attempting to solve the problem, resulting in a wave of sustainability, climate change and environmental projects.

From an organizational perspective, addressing environmental issues offers employees, contractors, volunteers and other members the opportunity to influence environmental sustainability through involvement and contribution. The challenge is to create the correct approach to involve these people—one that includes teaching, convincing, communicating, enabling, supporting and encouraging participation in the green process. Mandating change is rarely a recipe for success. Organizations must engage their people and position processes for successful implementation.

The sheer number of environmental projects and initiatives, as well as the fact that not everyone is buying into the issues, brings into focus the need for a systematic way to show the value of those projects. Employees do not always see the need for action because they do not understand the issues or know what they can do to help. Some executives do not understand environmental projects and sustainability efforts. They often feel negatively affected by project outcomes or perceive projects to require unrealistic investments.

Health Issues

Employee health mirrors the health of society. In the U.S. and other countries, citizen health continues to deteriorate.

Unhealthy employees contribute to lower productivity, decreased job satisfaction and increased accidents, medical costs, absenteeism and use of sick leave. For example, the annual healthcare cost of obesity in the U.S. is estimated to be as high as $147 billion a year, and healthcare costs related to smoking are approximately $96 billion per year. The effects of smoking are so serious that many organizations refuse to hire employees who smoke. Unhealthy employees put tremendous strain on an organization. The workplace can sometimes make employees sick. For years, employers have implemented different types of programs to protect employees from toxic chemicals, hazardous materials and harmful dusts. Because of this, many organizations are taking initiatives to ensure that employees are healthy through wellness, prevention and health activities.

Safety Issues

Employers have been addressing safety and accident prevention since the beginning of the Industrial Age, when workplace accidents reached near-epidemic proportions. In the early 1900s, much focus was placed on how to change the work environment and procedures in order to avoid incidents and accidents. These efforts continued through the 20th Century. In recent years, much effort has focused on the attitudes and behaviors of employees, including mental alertness and not only an understanding of safety standards but also a willingness to promote them among fellow employees.

Still, accidents and even fatalities happen far too often. The BP explosion and subsequent oil spill in the Gulf of Mexico is an extreme example of a failed EHS management system that cost BP about $50 billion. If an organization does not employ solid and robust safeguards, the

consequences can be disastrous; companies are investing heavily because of this reality. Consequently, there is a need and a desire to know whether EHS programs are working, and if they are not, what can be adjusted or changed to make them successful.

This book is for those involved in programs that affect environment, health and safety. The goal of many employers is to protect the environment, keep employees healthy and maintain a safe workplace, but at what cost? Employers need a way to show the value of EHS projects and programs. The following table shows some typical projects undertaken by organizations. The ROI Methodology provides a systematic way to measure success, including ROI for any of these projects.

Examples of EHS Projects	
Environmental Initiatives	Energy saving projects Recycling programs Water conservation projects Waste management solutions Air pollution projects
Health Programs and Initiatives	Industrial hygiene Ergonomics Stress management Health screenings Fitness and exercise Healthy eating and nutrition Smoking cessation programs Obesity programs Sick leave management
Safety Initiatives	Safety management systems Safety leadership programs Safety auditing programs First aid and personal protection Workers compensation Accidental prevention (causation and investigation) Safety incentives System safety Fire prevention and protection Behavior based safety programs

	Workplace violence Hazardous chemicals and materials

History of the ROI Methodology

The ROI Methodology described in this book was originally developed by Dr. Jack Phillips in the early 1970s. Its application in the training, development, education and human resources fields is unmatched. Dr. Patti Phillips, his wife and partner, used her interest in the application of the ROI Methodology in economic, community and international development to expand its use in government, nonprofit, non-governmental and in private sector organizations. Together, they founded the ROI Institute over 20 years ago and have applied this approach to accountability in more than twenty fields in more than sixty countries. To date, the application of the ROI Methodology includes the following areas of focus:

Broad Applications	
• Human Resources/Human Capital	• Talent Management/Retention
• Training/Learning/Development	• Project Management Solutions
• Leadership/Coaching/Mentoring	• Quality/Six Sigma/Lean Engineering
• Knowledge Management	• Meetings/Events/Conferences
• Organization Consulting/Development	• Marketing/Advertising
• Policies/Procedures/Processes	• Communications/Public Relations
• Recognition/Incentives/Engagement	• Public Policy/Social Programs
• Change Management	• Risk Management
• Technology/Systems/IT	• Ethics/Compliance
• Green Projects/Sustainability Projects	• Healthcare Initiatives
• Safety and Health Programs	• Wellness and Fitness Programs

Al Pulliam has used the ROI Methodology on a variety of environment, health and safety issues at two organizations. He has worked in EHS in both professional and managerial roles for two decades.

All the examples, data and case studies in this book are taken from EHS projects. The ROI Methodology offers common approaches to measuring and evaluating project

success so organizations can compare results across functions and channels. More importantly, it allows organizations to develop information that can guide them to improve and reposition projects as they expand across areas of the organization. By addressing EHS projects, executives and managers can drive improvement at the organizational level and improve the environment, employee health and safety.

Motivation to Pursue EHS Projects

Four important forces drive the implementation and maintenance of EHS projects. The first motivation for organizations to implement EHS projects relates to their public image. Organizations want their employees, stakeholders and any other observers to view them as environmentally friendly, health conscious and safety minded. This is a necessity to be considered a “great place to work,” the “most admired organization,” or the “best organization.”

The second motive is to comply with various regulations, laws and standards. To ignore them can be disastrous. For environmental projects, much of the initial effort was driven by regulatory efforts in the 70s. The timing is similar for safety because of major regulations passed by organizations such as OSHA.

The third force is cost savings. Recently, the motivation has been based on cost control and avoidance. When projects and programs are implemented properly, cost savings and cost avoidance are significant. Approximately 80 percent of green projects can produce positive ROIs. Most projects in employee health should deliver positive ROIs if properly implemented. Projects in safety should do the same.

A fourth driver is employee satisfaction, attraction and retention. Employees place a premium on an employer who is protecting the environment, offering a variety of programs to improve the health of employees and providing a safe and comfortable workplace.

These reasons alone make the subject of EHS critical to organizations. Consequently, it is important to ensure that EHS programs are adding value. Following through with the use of the ROI Methodology, this book shows how to measure the success of each of these programs using six types of data.

Audience

This book is designed for those who manage, support, initiate, implement and approve EHS projects and programs. First and foremost, it is for those who create these projects and programs. It provides the framework to plan for success and to measure that success throughout the process to ensure that value is delivered to various stakeholders.

Second, the book is for those who must implement the programs. It shows step-by-step how to collect data early and often in the program, making adjustments along the way. EHS program implementers will find the methodology to be user friendly.

The third audience is those who fund the projects, often the top executives and administrators in an organization. This book shows them that it is possible to measure the impact and financial ROI for investing in any type of program. It often brings in great relief and optimism that there is a proven, credible way to show the value of these important programs.

Next, the book is for individuals who support EHS programs. These are often managers who sometimes see these efforts as overkill or, at times, unnecessary. They

question whether a program is working and even when they see safety or health measures improve, they wonder how much of it was related to the project. This book takes the mystery out of these issues and brings this group into an enhanced supporting role.

The last audience is made up of individuals who teach, research and provide consulting for EHS programs. These are professors, researchers, independent consultants and even suppliers to this industry. Individuals who are very critical to the success of EHS programs will find this book a useful tool to show program value in a very credible way.

Collectively, this work provides many tips, tools and techniques that satisfy the diverse needs of these five audience groups.

Flow of the Book

The book first introduces issues in the EHS role, setting the stage for the rest of the book. It explains how the measurement and evaluation processes for EHS have evolved and describes some of the challenges along the way. It shows the progress that has been made and the need for a consistent measurement system. The ROI Methodology is introduced as a systematic, logically proven process for the EHS occupation. Through the next chapters, the ROI Methodology is described, starting with initial alignment and objectives and expands on data collection and analysis. The last chapters focus on reporting results and sustaining the measurement culture as a routine part of the process—not just focusing activities on these areas, but also achieving results. The organization expects a program to not only drive safety and performance, but also to represent a great investment. The table of contents illustrates this flow in more detail.

Acknowledgements

No book is ever the work of the authors alone. Many individuals, groups and organizations have participated in the development of this book. We owe particular thanks to the hundreds of clients we have had the pleasure to work with in the past two decades. They have helped shape, develop, mold and refine this methodology. Their contributions are evident in this book.

We are particularly indebted to Scrivener Publishing for taking on this project. Phil Carmical was very patient with our delivery schedule. Phil and the entire Scrivener team have been very helpful and we are impressed with their commitment to bringing innovative, cutting-edge processes to the environment, health and safety field.

Special thanks go to Rebecca Henderson for the final editing of this book. We look forward to working with her on many more publications.

From Jack:

Thanks to the team and staff at the ROI Institute. With their help, we are pleased to present another important ROI book. I want to thank Patti. The book was her idea. Thanks, Patti, for your diligent editing in the early stages of publication. Patti is an outstanding writer, researcher, teacher, consultant, educator and spouse. My love and my fondness for Patti grows every year. My life, this book, our family and the ROI Institute are much better because of her.

From Patti:

We have two mantras around our house. The first is *all roads lead to ROI*. Jack and I firmly believe that what life (work life and otherwise) holds for us is a balance of benefits versus costs. The second mantra is *we can only do good if we do well*. This mantra describes our mental model most accurately. Limited resources require individuals, organizations and communities to do right by the resources

at hand. These resources include people, planet and profit. Reference to this triple bottom line is not new; however, evidence of its acceptance is still waning. Organizations that invest in EHS are clearly interested in people and the planet, but unless their attention is also turned to the optimal allocation of financial resources, their ability to sustain EHS activities is limited, if not impossible. A critical element in measuring the success of optimal resource allocation is ROI. It is through this book that we hope to communicate to EHS professionals and executives a process that helps ensure they implement the right programs, for the right people, at the right time, for the right investment.

Many thanks go to the thousands of people with whom we have had the opportunity to share our process. Their input and encouragement keep us moving forward as we tackle new and interesting issues. Thanks, especially, to Phil Carmical at Scrivener Publishing for giving us an opportunity to describe how our process can help EHS professionals; and particular thanks to our co-author, Al Pulliam, for contributing his expertise in the field of EHS. Having been an executive in the EHS arena for years, he knows the importance of ensuring a balance between EHS investment and the outcomes generated by that investment.

Many thanks go to our team at the ROI Institute. They keep us on track, even when we try hard to veer down a different path.

Finally, and most importantly, thank you, Jack. I've always said Jack gives away more than he gets in return. It is certainly true when it comes to me. For 16 years, I have engrossed myself in a process he developed years ago, finding new and interesting ways to apply and teach it. His continuous encouragement keeps me moving, and he routinely challenges me to do more. I've heard it said that if a couple can complete each other's sentences—or even better, communicate without saying a word—their

relationship is a bond not to be broken. We have that; and Jack, while your ROI may not always be positive, I promise to make the intangibles well worth the investment!

From Al:

First I would like to thank Patti and Jack Phillips for inviting me to participate in the writing of this book. Its concepts and methods have an important place in the EHS professional's toolbox. To succeed at advancing EHS programs or projects that compete for scarce resources, the EHS professional has to not only think like a business person but also communicate like one. EHS professionals need to be able to turn what they believe intuitively into a credible business case for their projects, in a language understood by executives. It doesn't take much reading on the EHS professional social media sites to see a question or comment about "management" not approving a project or cutting funding for a program. Managers and professionals who can communicate value win budgets. This book is timely for the profession.

Certainly there is always the person behind the scenes who makes things happen. I would like to thank Nicole Mallory of the ROI Institute for helping keep me on pace. And thank you to my past colleagues from the former Bayou Steel Corporation. During my tenure at Bayou Steel, I had the opportunity to experience most all of the challenges and rewards an EHS career can offer. The lessons learned there have served me well.

List of Authors

Jack J. Phillips, Ph.D.

As a world-renowned expert on accountability, measurement, and evaluation, Dr. Jack J. Phillips provides consulting services for *Fortune* 500 companies and major global organizations. The author or editor of more than 50 books, Phillips conducts workshops and makes conference presentations throughout the world. His expertise in measurement and evaluation is based on more than 27 years of corporate experience in the aerospace, textile, metals, construction materials, and banking industries. This background led Phillips to develop the ROI Methodology—a revolutionary process that provides bottom-line figures and accountability for all types of learning, performance improvement, human resource, technology, and public policy programs. His work has been featured in the *Wall Street Journal, Business Week, Fortune* Magazine, and on CNN. Phillips also serves as president of ISPI 2012–2013. He is chairman of the ROI Institute, Inc., and can be reached at (205) 678-8101, or by email at jack@roiinstitute.net.

Patti Phillips, Ph.D.

President and CEO of the ROI Institute, Inc, Patti earned her doctoral degree in International Development and her Master's Degree in Public and Private Management. Early in her professional career, Patti was a corporate manager who observed performance improvement initiatives from the client perspective and knew that results were imperative. As manager of a market planning and research organization for a large electric utility, she and her team were responsible for the development of electric utility rate programs for

residential and commercial customers. In this role, she played an integral part in establishing Marketing University, a learning environment that supported the needs of new sales and marketing representatives. Internationally known as an accountability, measurement, and evaluation expert, Patti facilitates workshops all over the world and consults with U.S. and international organizations – public, private, non-profit, and educational – on implementing the ROI Methodology™. Patti is the author of *ROI Basics* (ASTD 2006) and *The Bottom Line on ROI* (CEP Press 2002), which won the 2003 ISPI Award of Excellence. She is editor or co-author of *ROI at Work: Best-Practice Case Studies from the Real World* (ASTD Press 2005), *Proving the Value of HR: How and Why to Measure ROI* (SHRM 2005), *The Human Resources Scorecard: Measuring the Return on Investment* (Butterworth-Heinemann, 2001), and *Measuring ROI in the Public Sector* (ASTD 2002).

Al Pulliam, MSPH

Al Pulliam, MSPH, is a veteran Environment, Occupational Health and Safety professional with over 20 years experience. This experience includes EHS management in heavy manufacturing, industrial construction, commercial construction and consulting. He holds a Master of Science in Public Health degree from the Tulane University School of Public Health and Tropical Medicine.

Chapter 1

Environment, Health and Safety is Everywhere

Proliferation of the Field

Abstract

This initial chapter describes the vast scope of topics and issues in the EHS field. After discussing the new role of EHS, it tackles environmental initiatives, such as energy-saving projects, recycling programs, water-conservation projects, waste-management solutions and air pollution projects.

Next, a variety of safety issues are explored, including safety management systems, safety leadership programs, safety auditing programs, first aid and personal protection, workers' compensation, accident prevention, safety incentives, systems safety, fire prevention and protection, behavior-based safety programs, workplace violence, hazardous chemicals and materials and occupational health and safety.

The last portion of the chapter focuses on health issues, including health screenings, healthy eating and nutrition, smoking cessation programs, obesity programs, industrial hygiene, ergonomics and stress management. Finally, the chapter stresses the fact that the changes needed must be managed within the EHS function.

Keywords: EHS topics, energy-saving projects, recycling programs, water-conservation, waste-management, safety,

safety leadership, safety auditing, accident prevention, health screenings, ergonomics, stress management, changes within EHS function

1.1 The New Role of EHS

No matter what industry, business or occupation, the field of environment health and safety (EHS) is everywhere. In the early 1970s, the United States Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) were established to protect the environment and employees from abuses by the industrial and business communities. In the 1970s and 1980s, the role of the EHS professional who worked in business was primarily one of compliance with new and complex regulatory regimes. Today, to a large degree, there has been a fundamental shift in the way organizations view the EHS effort. While compliance with the vast regulatory burden remains a major function of the EHS professional, organizations have recognized the importance of EHS-related matters to employees, communities and the bottom line. The scope of the EHS profession is vast, and senior EHS professionals are called upon to initiate, evaluate and execute initiatives in a number of areas.

According to a study performed for the Small Business Administration’s Office of Advocacy, environmental regulations cost businesses about $281 billion annually. Occupational safety and health regulation costs are estimated at $65 billion annually (Crain, 2010). This is just the estimated annual regulatory burden and does not include proactive initiatives in pollution prevention, health and wellness practiced by many EHS professionals. Below are a few examples of EHS initiatives and programs that the EHS professional faces on a daily basis.

1.2 Environmental Initiatives

Historically, environmental programs and initiatives were compliance based, stemming from a large and complex regulatory framework. The EPA, pursuant to certain milestone legislative laws/acts, promulgated the bulk of these regulations. Some primary laws of concern to the contemporary EHS professional include the Clean Air Act (1970), the Clean Water Act (1972), the Resource Conservation and Recovery Act (1976) (laws addressing hazardous waste) and the Comprehensive Environmental Response and Liabilities Act (Superfund) (1980), plus all of the subsequent amendments for each of these acts. Senior EHS professionals must have a working knowledge of how each of these regulations applies to his or her organization. When that applicability is understood, EHS professionals can develop programs and/or initiatives to comply with the regulatory requirements.

Determining the return on investment (ROI) of the programs has not been a real concern for the EHS field for a variety of reasons. Many companies use compliance with the regulations as a baseline for their environmental programs. Compliance is not optional, but that doesn’t mean the EHS professional shouldn’t seek cost-effective and optimal solutions. However, for these companies, ROI does not drive the decision-making process. Another reason ROI has not been of great concern to the EHS professional is that maximum penalties are known. This makes the ROI calculation straightforward, eliminating the need for any sophisticated analysis. Furthermore, since 1984, the EPA has used an economic benefit model to determine any economic gain from non-compliance. This essentially eliminates financial gains as part of the ROI equation. As mentioned,