



Comm-Trac™

An Approach to Calculating the Return on Investment (ROI) For Software Purchases

Return On Investment - Introduction

Return on Investment (ROI) calculations are commonly used as a primary value point in evaluating the purchase of products and services. The ROI is usually calculated by the formula:

$$\text{ROI} = (\text{Return} - \text{Cost}) / \text{Cost}$$

An ROI calculated at a value of 1 represents a purchase that returns 100% of the investment. An ROI of < 1 has a return less than the cost. Most desirable, of course, is an ROI resulting in a value > 1, delivering benefits greater than the costs incurred

Self Generated ROI's Are Most Reliable

In order to have a high level of confidence in an ROI calculation, companies often conduct their own ROI using financial data and estimates where necessary regarding the costs associated with the process being evaluated and the dollar benefits (return) that can be achieved. Use of ROI information from an unrelated company, even in the same industry is not usually a good business practice for a purchaser since there are variables that can affect an ROI calculation that will differ greatly between companies. Generic ROI analyses provided by vendors are also inherently difficult to apply, not only because of the variables between companies, but also because of the built in conflict issues related to the sales process.

A recent survey by Enterprise Management Associates found that only 8% of IT managers relied solely on a standard (vendor supplied) ROI for decision making on software products.

Considerations for Generating Return Estimates For ROI calculation

An ROI for evaluating the purchase of a product such as Comm-Trac™ can be calculated using the above formula. Where companies have reliable empirical cost data regarding the Environmental, Health & Safety (EH&S) processes, such data is certainly valuable to the ROI evaluation. Where costs are not as easily quantified, as is often the case, the ROI must be completed using reasonable estimates based in part upon company and industry past experience and in part on risk assessment of future potential incidence.

Discussion of Cost Savings (ROI Returns)

A. Savings of Labor Costs

Increased Efficiency. Comm-Trac™ can lead to significant improvement in EH&S work efficiencies, which leads to increased productivity. Better documentation and communication of information and processes across the company by using Comm-Trac™ can result in:

- Reduced “false starts” by EH&S and operations staff
- Reduced time spent searching for information and rework
- Retention of valuable program knowledge when personnel turns over (or during vacations or sick time), and allowing significant time savings when reassigning work functions.
- Increased efficiencies by extending EH&S responsibility to operations personnel and others across the company. These personnel are often lower cost per hour, and are more familiar with operations so can be more effective in the activity.
- Enhancement of the regulatory review and update process

Increased efficiency can lead to direct reductions in workforce, resulting in direct reductions in O&M labor budget. More commonly, though, increased efficiency (productivity) will allow employees to devote additional time to more productive activities, either in operations or in EH&S activities such as compliance assurance. Freeing up employee time can also allow internal staff to complete activities that may normally go to outside consultants, resulting in more direct reductions in O&M budgets. Increased productivity is an important factor in a company’s bottom line and is a legitimate factor for benefit quantification.

To quantify increased efficiency, the company will need to estimate the potential staff-hours benefit from Comm-Trac™, and then apply the efficiency factor to current payroll costs. Increased efficiencies will vary from company to company, from year to year, and from individual to individual, but EDM believes a reasonable estimate for efficiency savings from effective Comm-Trac™ use could easily be in the range of 200 to 250 hours per year (a 10% to 12% efficiency increase) for each EH&S manager or professional in the company. In addition, there should be additional efficiency savings on the part of operations personnel involved in EH&S activities, which should be taken into account as well. See the following table, built from EDM’s experience with a variety of companies, as an example of how one might quantify the savings in staff-hours for both management and professional staff from the effective use of Comm-Trac™. Please note the “Adjustment for Variability in Realizable Benefits” line, which takes into account the possibility that not every individual will be able to fully realize all the potential efficiency savings.

Potential Labor Savings through Effective Use of Comm-Trac™

| Function | Net EH&S Management Time Savings Relative to Function Hours | | | Net EH&S Professional Time Savings Relative to Function Hours | | |
|---|---|------------|-------------|---|------------|-------------|
| | Hrs/Yr. | % saved | Hrs saved | Hrs/Yr. | % saved | Hrs saved |
| Scheduling & Tracking Daily / Weekly / Monthly / Annual EH&S Compliance Tasks related to Permits & Regulations | 300 | 30% | 90 | 100 | 30% | 30 |
| Budgeting Activities | 200 | 20% | 40 | 40 | 10% | 4 |
| Compliance Program Development & Maintenance | 160 | 25% | 40 | 80 | 10% | 8 |
| Regulatory Tracking, Program Updates & Applicability Determinations | 300 | 25% | 75 | 120 | 50% | 60 |
| Permit Acquisition & Renewal | 180 | 20% | 36 | 160 | 20% | 32 |
| Report Preparation/Review <ul style="list-style-type: none"> • Periodic Management Updates • Compliance Submittals • Internal Audits • Incidents/Spills • Employee Accidents | 400 | 20% | 80 | 300 | 15% | 45 |
| Meetings / Training (Including Preparation) <ul style="list-style-type: none"> • Management • Peer Departments • Regulatory Agencies • Employees • Consultants/Vendors • Public | 300 | 10% | 30 | 80 | 10% | 8 |
| Studies / investigations / Consultant & Vendor Contracts & Related Oversight | 100 | 5% | 5 | 240 | 10% | 24 |
| Filing & Maintenance of Compliance Reports, Data & Records | 100 | 20% | 20 | 100 | 25% | 25 |
| Agency Relationships/Inspections | 40 | 20% | 8 | 160 | 25% | 40 |
| Actual Compliance Tasks (e.g., field sampling and data accumulation, required regulatory audits, waste management, EH&S equip. maintenance, etc.) | | | | 700 | 10% | 70 |
| | | | | | | |
| Totals | 2,080 | | | 2,080 | | |
| | | | | | | |
| Total Indicated Savings % | | 20% | 424 | | 16% | 346 |
| | | | | | | |
| Adj. for Variability in Realizable Benefits (-0.4) | | -8% | -170 | | -6% | -138 |
| | | | | | | |
| Anticipated Savings % | | 12% | 254 | | 10% | 208 |

B. Savings of Outside Service Fees

Third Party Regulatory Update Services. Comm-Trac™ contains online **direct links** to the full-text Code of Federal Regulations, the Daily Federal Register, and the List of Sections Affected (LSA). Further, direct links are maintained to the State Legislature's website, the State Regulatory agency's website, full text Code and Regulatory references, and "update" links of each of the fifty states. Collectively, these are essential reference materials for any EH&S manager, who currently can pay thousands of dollars annually for online access.

Access to the full-text of the applicable regulations through Comm-Trac™, as well as the monthly regulatory update service identifying changes to CFR Titles 29 (OSHA), 40 (USEPA) and 49 (USDOT) (provided as a part of EDM's annual maintenance agreement), should allow companies to discontinue these outside subscriptions.

EH&S Consulting Services. With the increased efficiencies realized by company EH&S management and professional staff, more time will be available for company personnel to perform tasks previously outsourced to consultants. Likewise, with the anticipated increase in compliance efficiencies and decrease in EH&S incidents, less consultant dollars will need to be expended.

Insurance Premiums. EDM's Comm-Trac™ can provide a meaningful source of risk identification and mitigation. Think of Comm-Trac™ as an "early warning system" poised to identify, expose and track potential environmental, health and safety losses before they can occur. An EDM customer can present itself in the best possible light to underwriters at renewal. Most policies include a manner of applying up to a 10% credit for superior risk prevention and tracking processes. These credits can yield significant savings for many mid-size to large firms.

C. Savings from Reduced Compliance Risk

Comm-Trac™ is designed to enhance a company's compliance assurance efforts, by:

- Clearly identifying and communicating the relevant EH&S compliance requirements for the company,
- Ensuring that individual responsibility is assigned for each compliance activity,
- Scheduling and communicating upcoming compliance activities,
- Tracking the completion of each compliance activity,
- Improving communication and consistency in compliance activities, and
- Enhancing the regulatory review and update process

There are many costs to be considered when assessing a company's compliance risk:

Financial Risk of Non-Compliance (direct). These risks include fines and penalties, attorney costs, and the payroll costs for the EH&S staff, operations personnel and management that will be required to respond to noncompliance findings. While noncompliance penalties may be significant, the labor and other costs associated with responding to a noncompliance situation can far outweigh the actual cost of penalties. EDM believes that a reasonable estimate for the cost of noncompliance response can range from a low of fifty thousand dollar for a minor infraction to several million dollars for a more significant infraction. Discussions with the company's Risk Manager may be helpful in putting a potential dollar value on EH&S risk reduction benefits.

Every company should consider its non-compliance risks, even if it has not had any previous citations. If a company believes it is in 100% compliance and its compliance assurance programs effectively manage risk on an ongoing basis, then the perceived compliance risk-avoidance value of a program such as Comm-Trac™ is lower. Conversely, if a company has had previous noncompliance issues, the financial and other risks are significantly increased and the perceived risk-avoidance value of Comm-Trac™ is much greater.

In addition, the implementation and use of an EH&S management tool such as Comm-Trac™ can be a mitigating factor in negotiating penalty determinations with the regulatory agency.

Financial Risk of Non-Compliance (indirect). Includes operating disruptions resulting from affected operating permits or processes. What would it cost a company to shut down operations while awaiting permit authorizations?

Potential Civil and Criminal Liability. A company's officers, directors, and personnel can face significant personal liability issues with regard to failure to implement a comprehensive environmental program. The existence of an effective EH&S program, such as Comm-Trac™ can provide, can go a long way towards minimization and mitigation of such potential liabilities.

Reputation Impact. Major events having an effect on a company's reputation can have a significant effect to a company's value and the bottom line. It is widely held in the financial literature that a company's reputation is a major factor in company stock price, and that EH&S performance is one of the top four issues impacting company reputation. The impact to a company's reputation from a significant EH&S mishap can be significant. However, putting a dollar benefit on reduction of that risk is subjective, and estimates can vary widely. Nevertheless, a sincere effort should be made by every enterprise to recognize the potential benefit of a strong EH&S reputation in the community.

D. Savings Related to Incident Avoidance

Every company faces the potential risk of occupational related injuries to employees, equipment damage or loss, and potential adverse effects to the environment. Examples of incidents risked include accidental spills, improper waste disposal and other potentially harmful company activities. A benefit to using a resource such as Comm-Trac™ is increasing efficiencies in your EH&S program in order to reduce the opportunity for such potentially damaging incidents to occur.

Occupational Injuries. Studies have shown that the ratio of indirect costs to direct costs to a company for an occupational injury range from 1 to 20. National safety organizations often use an average factor of 10. The direct cost of occupational injuries for a company can be obtained from its workers compensation files. For an ROI evaluation, a company can obtain historical worker compensation cost data, and multiple the annual cost by ten to determine the estimated total cost to the company for occupational injuries for a year. For example, if a company's listed annual workers compensation costs total four hundred thousand dollars, its total estimated cost for possible injuries would be four million dollars. (Another estimating method is to use the cost calculators provided by the U.S. Department of Labor (DOL) in its OSHA website located at: <http://www.osha.gov/SLTC/etools/safetyhealth/mod1.html>.)

Enhancing a company's safety and health program can have a dramatic effect on reducing occupational injuries and their associated costs. The U.S. DOL indicates that companies investing in tools to improve their safety and health program realize between four to six dollars savings for every dollar spent. The effective use of Comm-Trac™ can greatly benefit a safety and health program through improved communication of critical information, tracking of important safety/health activities, training scheduling and tracking, etc.

For ROI purposes, a company should identify some level of improvement (e.g., 10% reduction in injuries as a result of targeted improvements using Comm-Trac™) that may be obtained from improved safety/health programs, and then apply that level of improvement to the total dollar cost of occupational injuries to obtain a dollar benefit for the ROI. Again, this dollar benefit only represents one part of the actual benefit to the company because it does not consider the intangible adverse effects of the injury to the employee or the company beyond the actual direct dollars spent.

Environmental Accidents. The potential for accidental releases of pollutants to the environment will vary by company. Company history of releases may be helpful in this calculation. Certainly, even one release can result in significant corrective costs to the company. Comm-Trac™ can be used to help prevent accidental releases through: communication of proper work procedures; identification and scheduling of work process, inspections, and improvement steps; and increasing EH&S work flow efficiency.

E. Summary

It is clear that significant direct and indirect savings will result from the effective use of Comm-Trac™ or a similar comprehensive management tool. To assist in the difficult task of determining such savings – or “return” - for the purposes of an ROI calculation, EDM provides the attached worksheet. Simply fill in the blanks with either empirical cost data or considered estimates, and complete the ROI calculation. EDM is confident your company will quickly see the undeniable benefits available to its overall EH&S program, and applicable personnel, from the implementation of Comm-Trac™.

Please contact EDM if it can assist your company in any way with regard to its ROI assessment.

CONTACT INFORMATION

Environmental Data Management, LLC
10603 N. Hayden, Suite H-102
Scottsdale, AZ 85260

480-315-0227 - Office
480-315-0228 - Fax

www.edm-usa.com



Co-Authors

Richard C. Gramer, CPA

*President, CEO
Environmental Data Management, LLC*

Mr. Gramer has more than 25 years of private financial management experience spanning several industries, including software development and marketing, Internet search engines, real estate development, general contracting, trade construction, and independent power generation. During the past 15 years, Mr. Gramer has specialized in assisting businesses engaged in start up, work out, turn around, and growth. He will manage the business and legal relationships with EDM's clients, contractors, suppliers, regulatory agencies, and taxing authorities. Additionally, Mr. Gramer will be responsible for EDM's internal controls, including both financial and administrative matters. He holds a B.S. degree from St. John's University (Minnesota) and attended law school at William Mitchell College of Law in St. Paul before accepting a position with a large southwestern developer based in Phoenix.

Walter L. Bouchard, MPH, CIH

*Former President, CEO and Co-Founder
EDM*

Mr. Bouchard has 28 years of experience as an EH&S professional, which includes: certification in comprehensive practice by the American Board of Industrial Hygiene, 12 years as a senior corporate executive responsible for EH&S compliance for a \$6.5 Billion U.S. corporation, 4 years as Vice President of an A&E firm with over \$1 Billion in annual revenues, and 10 years Founder/CEO of a successful EH&S consulting firm with operations in the Southwestern U.S. and Mexico. Throughout his career, Mr. Bouchard has been continuously active on national and regional governmental advisory boards dealing with public health and the environment and on medical, environmental and occupational health research committees. He currently serves on the Board of Directors of the American Lung Association of Arizona/New Mexico (ALA AZ/NM) where he is Chair of the Advocacy Committee and a recent Past President. Mr. Bouchard served in Viet Nam with the United States Marine Corps 1969-1971, and has a BS with honors degree from Western Illinois University and an MPH degree from the University of Michigan.

David S. Jallo, REM, MBA

*Former Vice President, CTO and Co-Founder
EDM*

Mr. Jallo has held technical and management positions with Arizona Public Service Company, Pinnacle West Capital Corporation, Southwest Toxicology Service, Inc., and Saint Luke's Hospital. He is a Registered Environmental Manager, and has over 20 years of experience in the EH&S field and well as health care industry experience. Mr. Jallo has developed particular expertise in the use of digital solutions in effective EH&S programs. Mr. Jallo has a BS degree in Pharmacology from the University of Arizona and a Masters in Business Administration from Arizona State University. Mr. Jallo has participated in environmental issues at the national level in such organizations as the Electric Power Research Institute and the Edison Electric Institute. He was Executive Vice-Chairman and Board member of the Arizona Environmental Strategic Alliance, in partnership with the U.S. EPA, the Arizona Department of Environmental Quality and environmental leadership companies in Arizona. Over the past five years, he has focused on environmental information management systems (EIMS) and environmental management systems (EMS) with a particular focus on digital solutions.



Worksheet for ROI Calculation

A. Annual Labor Savings:

| | | |
|-----|---|----|
| 1. | EH&S Management Current Salaries and Wages | \$ |
| 2. | Related Payroll Burden (taxes, benefits) (% x 1) | \$ |
| 3. | Total Management Current Payroll Costs (1 + 2) | \$ |
| 4. | Comm-Trac™ Efficiency Factor (EDM, 12%) | % |
| 5. | Savings Return (Mgmt) (3 x 4) | \$ |
| 6. | EH&S Professional(s) Current Salaries and Wages | \$ |
| 7. | Related Payroll Burden (taxes, benefits) (% x 6) | \$ |
| 8. | Total Prof, & Field Current Payroll Costs (6 + 7) | \$ |
| 9. | Comm-Trac™ Efficiency Factor (EDM, 10%) | % |
| 10. | Savings Return (8 x 9) | \$ |
| 11. | Affected Operations Personnel - Salaries and Wages. | \$ |
| 12. | Related Payroll Burden (taxes, benefits) (% x 11) | \$ |
| 13. | Total Operations Personnel Payroll Costs (11 + 12) | \$ |
| 14. | Comm-Trac™ Efficiency Factor (EDM, X %) | % |
| 15. | Savings Return (13 x 14) | \$ |

Total Annual Labor Savings (5 + 10 + 15) \$

B. Annual Outside Services Savings:

| | | |
|----|--|----|
| 1. | Third Party Regulatory Update Services | |
| a. | Annual Costs (subscriptions, etc.) | \$ |
| b. | Percentage reduced due to Comm-Trac™ | % |
| c. | Annual Savings (1.a x 1.b) | \$ |
| 2. | EH&S Consulting Services | |
| a. | Annual Costs (fees, expenses) | \$ |
| b. | Percentage reduced due to Comm-Trac™ | % |
| c. | Annual Savings (2.a x 2.b) | \$ |
| 3. | Annual P&L Insurance Premiums | |
| a. | Annual premiums | \$ |
| b. | Percentage reduced due to Comm-Trac™ | % |
| c. | Annual Savings (3.a x 3.b) | \$ |

Total Annual Outside Services Savings (1.c + 2.c + 3.c) \$



C. Compliance Risk Reductions:

| | |
|--|----|
| 1. Direct Financial Risk Factors | |
| a. Fines / Penalties Factor | \$ |
| b. Attorney Fees Factor | \$ |
| c. Corrective Labor and Other Factors | \$ |
| d. Sub-total (a + b + c) | \$ |
| e. Comm-Trac™ Mitigation Factor (___%) | % |
| f. Direct Financial Risk Factor Return (d x e) | \$ |

| | |
|--|----|
| 2. Indirect Risk Factors | |
| a. Financial – Operations Disruption Factor | \$ |
| b. Potential Civil / Criminal Liability Factor | \$ |
| c. Reputation Factor | \$ |
| d. Sub-total (a + b + c) | \$ |
| e. Comm-Trac™ Mitigation Factor (___%) | % |
| f. Indirect Risk Factor Return (d x e) | \$ |

Total Compliance Risk Reduction Savings (1.f + 2.f) \$

D. Savings Related to Safety Costs:

| | |
|---|----|
| 1. Occupational Injuries Factor | |
| a. Annual Workers Compensation Cost | \$ |
| b. Direct Cost Factor (e.g., “10”) | \$ |
| c. Company Cost of Injuries (1.a x 1.b) | \$ |
| d. Comm-Trac™ Mitigation Factor (___%) | % |
| e. Occupational Injuries Factor (c x d) | \$ |

| | |
|--|----|
| 2. Environment Accident Factor | |
| a. Cost of single accidental pollutant release | \$ |
| b. Comm-Trac™ Mitigation Factor (___%) | % |
| c. Environmental Accident Factor (a x b) | \$ |

Total Savings Related to Safety Factors (1.e + 2.c) \$

E. Grand Total of Savings Factors (Return) (A + B + C + D) \$

F. First Year Total Cost of Comm-Trac™ \$

ROI (E - F / F)

