

Financial Management Concepts

Making the bottom-line case for safety

By Shawn J. Adams

MANY SAFETY, HEALTH AND environmental managers have difficulty getting their proposed workplace improvements accepted, even when these changes would correct an identified weakness in a safety system (Dillon 62; Blair 127). It may be that OSHA requires a certain change, or that higher losses or criminal liability may result if the resources are not allocated (Schneid and Schumann 13). Yet, with so many forces demanding organizational resources, SH&E-related training programs, procedural changes and equipment purchases are often assigned a lower priority by management, which means they are often not pursued or implemented.

Dillon's research indicated that the most important safety function is seeking "active support for safety function affairs from higher level management of his or her enterprise" (62). Blair found that the most serious problem safety managers face is the lack of "upper management commitment and support" (127), while Ferguson found that being trained in the financial aspects of safety was an important future competency for safety graduates (79-80). A recent survey of ASSE chapter presidents indicated that a top-10 trend over the next decade will be for SH&E professionals to show management how safety can positively impact the bottom line (Adams 27).

Speaking Management's Language

When SH&E managers participate in strategic planning, they interact with corporate executives, marketing managers, accountants, attorneys and production managers. However, many safety managers lack the management training needed to communicate in a language that these individuals can understand and appreciate. This is true even of graduates of safety baccalaureate programs accredited by the Accreditation Board for Engineering and Technology (ABET), which do not require classes in

business management and accounting. On the business side, baccalaureate programs accredited by the Assn. to Advance Collegiate Schools of Business (AACSB) do not require classes in safety and risk management as part of their curriculum.

To work more effectively with accounting, finance, marketing, quality management and human resources professionals, SH&E professionals must become better versed in the common language of business. To convincingly demonstrate that safety can positively affect the bottom line, safety managers must use business language and terms, and be able to provide actual examples of savings generated by safety efforts.

Many SH&E practitioners—particularly those with a background in insurance loss control and risk management—are familiar with the Insurance Institute of America, which grants the chartered property casualty underwriter (CPCU) designation. According to study materials used for part eight of the CPCU exam, "three widely-used criteria for evaluating investment decisions" are pay-back method, internal rate of return and net present value method (Block and Hirt 130).

When SH&E managers makes recommendations, they often relies on past experience regarding losses, history of OSHA citations/

fines and the company's experience modification rate (EMR). When top managers consider these recommendations, they work from a knowledge base that views the proposals almost exclusively in economic terms. As a result, safety is viewed as an expense—unless SH&E professionals can demon-

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To better demonstrate that safety can positively affect the bottom line, safety managers must use business language and terms, and must provide actual examples of savings generated by safety efforts.



strate that these changes are an investment that will pay future dividends. SH&E practitioners must learn to use financial methods (such as the pay-back method, internal rate of return and net present value method) to better connect these executives to the potential bottom-line consequences of inaction. Although these formulas are not always accurate, they provide a more-formal method of analyzing an economic decision than relying solely on intuition. By utilizing these methods, SH&E managers increase the likelihood of gaining the support needed.

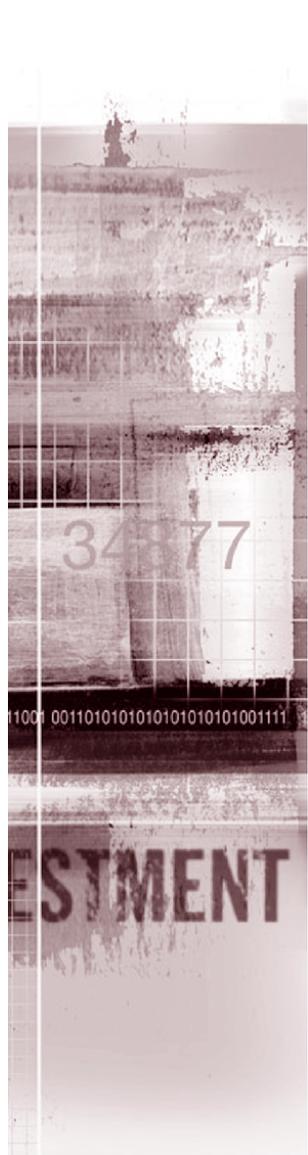
Business Concepts for SH&E Professionals

Present value of a dollar (often represented by "PV") is one key financial concept for SH&E professionals. If a person receives or invests one dollar today, it will not be worth the same amount one year from now (unless there is no inflation). For example, suppose a person invests \$1.00 in 2001; if inflation is five percent per year for the next two years, then the future value of the dollar ("FV") is only \$0.9025 ($1.00 \times 0.95 = 95$ cents; $95 \text{ cents} \times 0.95 = 90.25$ cents). When making investment decisions, a firm must determine what a dollar invested today will be worth tomorrow, as well as what the return tomorrow will be worth. The exception to this rule is if deflation occurs or products start costing less; this has not occurred on a large-scale basis in the U.S. since the Great Depression, although it occurs on a small scale (e.g., the price of computers).

For SH&E managers, this is analogous to estimating injuries (losses) that may/may not occur in the future based on historical data.

The cost of capital is another important financial concept. This is simply what it costs a company for the money needed to operate. Capital sources may include "dividends, interest rates, bond premiums and other payments to its owners, creditors or other providers of funds" (Head, et al 15). A company needs start-up funds even before the first dollar of revenue is earned. It may also need funds to expand and profits may not be adequate for this purpose; consequently, external capital financing sources are pursued. Just like an individual, a company attempts to keep the cost of money borrowed low and the return on capital invested high in order to generate profit.

The human resources field is similar to the safety field in that HR serves mainly in a staff capacity and must justify its existence as "good for the company." Like safety, which tries to estimate future losses based on historical data, HR must project future personnel issues (e.g., turnover) based on data that rely greatly on unpredictable variables (e.g., workforce preferences and labor markets). Like safety, HR uses general management concepts in an attempt to quantify its contribution to the company. According to *Human Resources Accounting*, "Conceptually, all costs have 'expense' and 'asset' components. The problem



is measuring [those] components" (Flamholz 60).

In most cases, the costs of safety are much more apparent—be it an increase in EMR or insurance costs or OSHA fines—than its economic benefits. SH&E managers have the education and experience to help top management see the benefits of safety—they simply must do a better job of presenting it in a language (economic and financial terms) these managers understand.

The Pay-Back Method

The pay-back method is a simple approach that determines how long it will take to receive the return on an investment in a safety recommendation. For example, suppose a company needs a lockout/tagout (LOTO) program. However, estimates suggest that lost production (due to training-related downtime) and equipment purchases will cost \$40,000. Faced with this cost and the uncertainty that OSHA will even inspect, the firm may be tempted to delay implementa-

tion of the program.

Suppose this company averages three hand amputations with a direct cost of \$50,000 each because it has no LOTO program. In this scenario, implementing the program becomes a good business investment because the initial investment will be paid back after the first loss that does not occur. While it is impossible to measure a loss that does not occur, if four hand amputations occurred last year, but that number drops to one the first year the LOTO program is implemented, it is a reasonable assumption that the investment has paid for itself.

It should be noted that this approach assumes no major variables, such as number of hours worked from year to year. The greatest deficiency of this method involves using it to assess long-term investments due to the present value of a dollar today not being the same as the value of a dollar in the future.

Internal Rate of Return

The internal rate of return method involves "the discount rate which makes the sum of the present values of all expected cash inflows exactly equal to the original investment" (Keir 103). This method is used to evaluate a project based on the rate of return top management requires in order to commit financial resources. For example, Project A will produce a 10-percent return, but the firm has established 15 percent as the benchmark for undertaking a project;

so, even though Project A could make money, it will likely be rejected by management. In most settings, key accounting staff members can provide these rates, as well as additional accounting and financial tools and formulas to help managers—including SH&E and risk managers—determine whether a proposed project is a good investment.

If a project is expected to return a certain dollar amount next year and the year after, one must also determine the value of the dollars to be received. Since tomorrow's dollar is not worth as much as a today's, a company seeks to ensure that money saved in the future due to safety improvements made today represent a good investment. One must also understand that this method has a reinvestment assumption since companies must keep their money working in order to maximize profits (Block and Hirt 356).

As a hypothetical, suppose Company A averages 10 back injuries a year at a cost of \$25,000 per injury. To combat this problem, the firm buys mechanical lifting pallets at a cost of \$250,000; the pallets are expected to cut the number of back injuries in half. This assumption proves correct and at the end of each year, five back injuries are prevented. Thus, in year one, the savings is \$125,000 (five injuries at \$25,000 each). The same savings result in year two, but the value must be discounted due to inflation.

Now, assume these pallets will last either two or three years. If the pallets last only two years, they are not a profitable investment because, although they have saved \$125,000 in each of the two years, the second-year savings must be discounted for inflation. However, if the pallets last three years, they are a good investment. Although the second- and third-year savings are discounted, the dollars received during those three years are more than the initial investment (barring high inflation). Certainly, one could look at this scenario and cite several factors that would make the pallets a good investment even if they only lasted two years. For example, OSHA could fine the firm, workers' compensation losses could increase or 15 back injuries might occur next year instead of 10. Conversely, one could also argue that no back injuries will occur next year or that OSHA might not inspect.

As noted, these methods are not absolute, even when all variables are considered. However, the methods provide a more-systematic method for managerial decision making. It is similar to investing in a stock only after reading extensively about the company and examining expert reports versus buying a stock merely because the market has increased in value in recent years. While most managers are concerned about workers' personal safety, they also need to know about the economic aspects of their decisions, since poor decisions will adversely affect the bottom line.

Net Present Value Method

Net present value "is calculated by subtracting the original cash outlay required from the sum of the present values of all expected annual cash flows." A project is acceptable when "the present value of a

These financial tools can help SH&E managers evaluate safety investments and present recommendations in a language that managers understand.

cash inflow is determined by discounting that inflow at the cost of capital for the firm" (Keir 106). Inflows arriving in later years must provide a return that is at least equal to the cost of financing those returns (Block and Hirt 354). Suppose a firm spends \$1,000 on safety equipment today, and that equipment will save \$500 per year for the next two years. After all variables are considered, the return is not considered equal because \$500 received next year and another \$500 the year after will not be worth the same as \$1,000 invested today.

An important part of this concept is discounting cash flows to be received in the future to reflect net present value. Imagine that a company invests \$1,000 today and expects a \$500 return in each of the next two years; if inflation is expected to be 2.5 percent in each of those years, then the net present value of the \$1,000 to be received must be discounted back. So, year one's \$500 is discounted 2.5 percent ($\$500 \times 0.975$) for a net present value of \$487.50. In year two, the \$500 is discounted twice to reflect inflation of both year one and year two, making it worth \$475.31 in today's dollars. Although an equal dollar amount would be invested and received, this investment would actually become an expense—the initial \$1,000 investment would yield a \$1,000 return that would really only be worth \$962.81 due to inflation.

Making the Case to Management

SH&E professionals must understand that these methods are only a first step—albeit a valuable one—toward evaluating a safety investment. Tax laws regarding expense deductibility, depreciation and related factors also influence the final decision. Practitioners must also remember that capital is a limited asset. As a result, a firm must often make mutually exclusive choices, with the better of two positive options selected. Because of the complexity of these formulas, safety and risk managers should seek assistance from the CFO or other financially savvy staff. These colleagues are responsible for helping management evaluate decisions based on their eventual economic impact and for helping top management determine the value of various investments. They also have knowledge of rate of return, time of investments return and risk that a firm's top management will accept. They are an important ally in the effort to implement safety improvements.

Not Perfect, But Indispensable

As noted, these methods are not foolproof; thus, it is important to acknowledge that certain variables affect all business decisions. For example, general managers often make educated estimations about variables such as interest rates, unemployment rates, labor costs and the financial markets. Despite this potential uncertainty, these methods are a step in the right direction.

According to Hansen, SH&E professionals suffer from the "Dangerfield Complex." After becoming certified, they wonder when respect will come from top management. Hansen argues that it will not and quotes Burk, who says, "Participation among top

management ranks should not be viewed as a right. It must be earned through responsible performance. When the safety and health profession becomes concerned with the promoting cost-effective use of organizational resources, it will be further empowered through membership among top management ranks" (21). Razeghi concurs, noting that "the single most-effective way for safety professionals to 'get the attention' of senior management would be through the identification and definition of how safety systems can not only protect the health and well-being of people, but also how they can in fact grow the bottom line" ("An Interview With" 16).

While intuition and experience-based knowledge are invaluable, resources are too vital to use based on intuition alone. Certainly, one can always cite several good reasons to implement safety procedures—such as required governmental standards, legal liabilities, negative public perception, employee relations and moral obligations. However, the pay-back method, internal rate of return and net present value method are tools that can help SH&E managers systematically evaluate safety investments and present their recommendations in a language that managers understand. The end result will be more safety recommendations being accepted and implemented. ■

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