Calculating the Return On Investment in Training: A Critical Analysis and A Case Study

by Harold D. Stolovitch and Jean Gabriel Maurice

Harold D. Stolovitch possesses a Ph.D. in Instructional Systems Technology from Indiana University. He has been a teacher, trainer, researcher, and consultant for more than 37 years. Harold has authored more than 100 books, reports, chapters, and articles on various aspects of instructional and performance technology. He has produced countless training materials, games and simulations, and other interactive activities using a wide variety of media.

Dr. Stolovitch recently retired from the Université de Montréal, where, as a full professor, he taught and conducted research in Instructional and Performance Technology. He is a clinical professor of Human Performance Technology at the University of Southern California. Dr. Stolovitch is a consultant to business, industry, government, the military, and the police.

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"I need a training program on..." is a frequent reflexive mantra that issues forth when organizations experience significant change or seek improved performance.
"We have to adapt to new systems."
"Our sales must improve."
"Customer service is inadequate."
"We need greater productivity from our workers."

These statements and other similar ones often result in hasty decisions to train. Before long, curriculum committees form; training managers, instructional designers, and subject-matter experts embroil themselves in discussions about media; instructors gear up for the delivery of a new training blitz.

It is all very exciting... *and expensive.* It is also vastly time and resource consuming. What makes it bearable, however, is the comforting thought that "we are doing the right thing for our people." We are investing in our most important asset. The activity and expense is contributing to the career development of our human resources. We are increasing our human capital assets. Best of all, we are building our organization's competencies. We have certainly heard expressions such as: "The ability to learn more rapidly than our competition may be our only competitive advantage" (de Geus of Shell Oil Company in Meignant, 1995, p. 36).

Companies like Digital Equipment Corporation and Air Inter have invested as much as 19.5% of total salaries in training (Meignant, 1991, p. 25). In the United States, corporate training expenditures have risen from $50.6 billion in 1994 to $58.6 billion in 1996, an increase of more than 21.5% in four years (*Training*, October 1994-October 1997). With this type of enthusiasm, spending on training to produce improved human performance must be the right thing to do...or is it?

The purpose of this paper is twofold. First, it critically examines the role of training for improving the performance of people in ways that both they and their organizations value. It focuses on what the true worth of training is and can be for organizations. Second, it proposes a model for calculating return on investment (ROI) in training—one which has been designed based on careful research and practical experience. In describing the ROI model, the paper presents a case study of its application within an operational context at a bank (name withheld).

This text is divided into six major content sections: front-end analysis; wasted dollars on training; organizational factors that affect training ROI; human capital; the value of training and obstacles to calculating training ROI; a model for calculating ROI; and a case study of the model's application. A final section draws conclusions and offers recommendations for applying the model in other organizational contexts.

Front-end Analysis: Is Training Necessary or Sufficient?

Harless (1970) coined the term "front-end analysis" (FEA) to describe a methodology for identifying and characterizing gaps between desired and actual performance. His work had many predecessors (Gilbert, 1962) and successors (Kaufman, 1991; Rossett, 1987; Rummler and Brache, 1992; Stolovitch and Keeps, 1997). What triggered this need for FEA was a simple concern—why, if we are using training to improve performance, are we not obtaining desired results? And this led to the more nagging question of whether we are prescribing training inappropriately or without sufficient support mechanisms to have effect.

The conclusion from a host of evidence is overwhelmingly unanimous (Rummler and Brache, 1996; Stolovitch and Keeps, 1992). Other than for skill/knowledge (and under some circumstances attitude) deficiencies, training is an inappropriate solution to performance problems. Even when skill/knowledge gaps are major causes of inadequate performance, rarely is training sufficient to produce desired results.

Training is a potentially appropriate response in only three instances in organizational contexts (Rossett, 1987):

- It is required by law, regulation, or mandated circumstances.
- A new system is being introduced to personnel (it may be an existing system, but it is new to the persons required to work with it).
- There is a gap between desired and current performance.

If the law mandates training, then discussions of training ROI are unnecessary (unless the required training is obviously a waste and efforts to eliminate the mandate should be initiated). Where the organization is introducing new systems and the persons who must become proficient do not possess the competencies, training, job aids, and other support tools are potentially relevant solutions. Selection of training, performance aids, or support systems depends on the complexity of the new system, the degree of performer prior knowledge, the frequency of task performance, and the acceptability of using external support tools (e.g., would you accept your surgeon operating on you as he or she follows a procedural flowchart?).

Performance improvement instances, however, provide greater complexity for decisionmaking. Causes for a gap between desired and actual performance may not be (and most frequently are not) due solely to skill/knowledge deficiencies (Gilbert, 1996). Yet, in many cases, organizations automatically turn to training solutions. As many researchers have pointed out (e.g., Dean, 1994; Gilbert, 1996; Rosenberg, 1990; Rummler and Brache, 1996; Stolovitch and Keeps, 1992), more than 80% of performance gaps have little to do with skill and knowledge deficiencies. Rather, they are mostly the result of the following:

- Inadequate information (e.g., lack of clear expectations, insufficient and/or untimely feedback, incomplete documentation).
- Insufficient tools and resources (e.g., procedures, equipment, personnel).
- Inappropriate, inadequate, and even counterproductive incentives (e.g., lack of appropriate rewards for desired performance, punishments for doing the right thing, rewards for non-accomplishments).
- Task interference that places obstacles in the path of achieving desired ends.

All of these are environmental factors. Yet rather than addressing them systemically, the more frequent pattern is to "fix" the individual through training or attempts to increase his or her motivation level. This latter factor is rarely a cause of poor performance. It is usually a *result* of environmental deficiencies.

In summary, training is often the cure of choice for a range of performance gaps whose causes have little if anything to do with skill/knowledge deficiencies. Its implementation, consequently, yields little to no effective results. It follows, then, that there should be no expectations of positive ROI for training. Even when skill and knowledge deficiencies have been identified as contributing causes and appropriate training administered, organizations should not anticipate significant gains unless they have addressed all the other causes of inadequate performance.

Wasted Training Expenditures

The foregoing information naturally leads to a troublesome conclusion. Training, inappropriately selected or insufficiently supported by other interventions, results in waste. The most obvious waste stems from the attempt to decrease a human performance gap through training courses when the problems lie elsewhere. An example helps to illustrate this point.

An insurance company decided to separate sales and customer service for its group insurance accounts. Until recently, company salespersons not only sold group plans to client companies, but also helped these firms when they experienced difficulties in filling out forms or tracking claims and obtaining settlements. The company determined that salespersons were spending too much time on customer service and not enough on "selling." The result: centralization of customer-service functions and a toll-free number. Simulations demonstrated that both sales and customer-service effectiveness and efficiency would increase. Reality produced the contrary: massive customer complaints, slow-downs in solving customer problems, and a direct negative impact on group policy renewals.

The company decided that training for its customer-service agents would solve the problem. Investment in course design (approximately $100,000) plus several days of training for the customer-service agents (approximately

$200,000 in salary, replacements, and training delivery) resulted in only marginal improvements.

Only when the company conducted a thorough FEA did the true major causes of the performance deficiencies reveal themselves. These included the following: diversity of documentation and procedures from different regions, resulting in a heterogeneous and unmanageable database; lack of access to records that were being used by various departments; outdated terminals; poor telephone equipment; inequities in staff classifications (persons drawn from different departments with different salary levels doing the same job); poor procedural guides...and almost 20 other factors of which skill/knowledge deficiencies played a significant, but relatively minor role. Starting over systemically led to greatly improved performance. Nevertheless, the company had incurred enormous waste and loss in time and money through improper selection of the training cure.

Other causes of wasted training expenditures include:

- Poor selection of persons to attend training. A study conducted in a major Canadian transportation company demonstrated that almost 30% of employees enrolled in various courses were inappropriate for these. Reasons for enrolling were the following: manager had registered them without consultation; down period so time for training was available; close to retirement, training probably helpful; recommended by others as good or fun; had to fulfill training days quota; nothing else available, etc.
- Persons enrolled in training without clear expectations from supervisors. Result: uncertain about how or when to apply new skills.
- Lack of support back on the job.
- Lack of post-training performance monitoring.
- Lack of resources to implement new skills.

Stimuli	Response	Consequences
E **Information**	**E** **Resources**	**E** **Incentives**
• Poor descriptions of what is expected of performance • Poor job documentation or job aids • Poor performance criteria or feedback	• Not enough people, money, time and equipment • No access to leaders • Inefficient work processes and ergonomics	• Negative or little compensation • No recognition for exemplary performance • Poor performance rewarded the same as good performance • No career planning opportunities
I **Knowledge**	**I** **Capacity**	**I** **Motives**
• Lack of or poor quality training and education • Training as the automatic performance improvement solution • Training left to chance • Training unnecessarily difficult • Training irrelevant for worker • Training supervisors who are not trained instructors	• People with intrinsically different performance abilities than job requires • Performance scheduled for times when people are not at their peak • Lack of performance aids to augment capacity (e.g., magnification of difficult visual stimuli)	• Job design so it has no future • Pep talks to promote performance in punishing situations instead of incentives • Fear of failure or punishment • Working conditions that are unpleasant

E=Work Environment, I = Individual

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Figure 1. Performance Engineering Model.

- Lack of incentives to apply new skills and knowledge.

One of the saddest, yet most consistent research findings is that less than 20% of training transfers to the job (Baldwin and Ford, 1988; Broad and Newstrom, 1992; Ford and Weissbein, 1997). Considering a $60 billion expenditure in training for 1998, the amount of money business and industry wastes is staggering.

Organizational Factors Affecting Training ROI

As alluded to above, training in isolation has a low potential for improving human performance. Gilbert (1996) has identified a number of obstacles that affect performance. These are summarized in the matrix in Figure 1. Hence, for example, even highly skilled salespersons will be unable to achieve unrealistic performance results if asked to sell a product for which they have little information, few marketing tools, inadequate rewards, or if it is inferior to the competition—and this, regardless of the quality and amount of training they receive.

The literature on human performance (Stolovitch and Keeps, 1992) stresses that lack of clear expectations and insufficient feedback in particular are the two greatest causes of underachievement from workers at all levels. Unless the true performance obstacles are addressed, a return on the training investment is unlikely to materialize.

Human Capital, The Value of Training, and Obstacles for Calculating Training ROI

All of the preceding appears to present a rather gloomy and pessimistic portrait of the value of training. This is definitely not the intent of this article. An avowed purpose is to present a critical analysis of poor training selection and lack of systemic support of the training effort within organizations. We now alter our discourse and offer a more positive view of training, what it confers, and how its benefits may be calculated.

A central concept to the calculation of ROI for training is that of human capital. At this point, it is useful to define two key terms and from these derive the important contribution training can make to organizational performance.

Capital: The common dictionary definition of this word is "any form of wealth employed for the production of more wealth." During the agricultural era, land represented the major unit of capital. By the time of the industrial revolution, money and physical plants or machinery emerged as the preeminent units of capital wealth. Now that we have entered the information era, knowledge has replaced physical assets as the most valuable capital asset (Crawford, 1991).

Human Capital: This leads to the theory of human capital, which is based on the notion that education, by its very nature, transmits useful knowledge that increases the productivity of individuals and that in turn justifies increases in wages and salaries tied to greater worker productivity (Gravot, 1993, p. 2). This suggests that education and training, specifically targeted to meet an organization's needs, can increase the value of its human capital. Both the organization and the individual employee benefit from the increased value.

More than "just a theory," economists such as Thomas W. Schultz (1981) and Gary S. Becker (1993) have won Nobel prizes for their demonstration of the impact and value of human capital at macro-economic levels. In 1995, the American Management Association conducted a national survey of major businesses and identified a very strong interaction between increased training budgets and decreases in personnel. They found that 68% of businesses that had increased their training budgets after a significant downsizing improved their profits. Only 42% of companies maintaining the same training budgets as before showed profit gains. The companies with larger training budgets saw their profits jump an average of 44% compared with the other companies whose profits went up 29% (Gordon, Lee, Picard, Stamps, and Zemke, 1996).

Many economists and researchers have provided powerful evidence that the intellectual assets of a corporation are usually worth three to five times its physical assets (e.g., Edvinsson and Malone, 1997; Lickert and Pyle, 1971; Stewart, 1994; Stewart, 1997). All of this suggests that human beings represent immense wealth for organizations and that training, appropriately delivered, can lead to increased wealth.

The problem, however, is that virtually no companies, other than those owning sports teams, calculate the value of their human assets. Examination of any annual report illustrates that physical assets are clearly identified (e.g., buildings, machinery, inventory) while gifted engineers, marketers, and managers appear nowhere on the balance sheet. Further, training expenditures merely show up as costs that decrease company profits (Edvinsson and Malone, 1997).

All of this creates a climate that explains why training does not receive the careful attention it should. If managers perceived training as an investment with strong potential to increase the value of a company's capital assets, perhaps they would consider its selection, delivery, support, and maintenance more carefully.

A second problem is the difficulty training managers experience in calculating the value of the training effort—training ROI. Crane (1989, p. 47), in a doctoral study on quantitative measures and cost-benefit analysis in human resource departments, concluded that "training is measured subjectively rather than quantitatively. Few programs are measured in terms of results. The most common evaluation method used is participant feedback sheets. Training is seen as an expense...training results are usually presented in demographic rather than economic terms."

Lombardo (1989, p. 61) found that training managers strongly desire methods and models for calculating training ROI. They want to know "whether the training curriculum is based on genuine organizational need or simply a carry-over of past practices." However, they complain that they do not know how to find out.

Grove and Ostroff (1990) identified four major barriers that discourage verifying training ROI:

- Senior management does not ask for it.
- Training managers do not know how to do it.
- Training managers do not know what to measure and evaluate.
- The effort may be both costly and risky.

This is confirmed by Meignant (1991, p. 23), who also found training managers anxious about their inability to calculate "the famous return-on-investment of training." He goes on to deplore the situation, asking "What, then is the contribution of training to the quality of performance?" He concludes by stating that the existence of training courses has no worth—only the added value they provide counts (p. 24).

To summarize, people generally represent greater value for an organization than its physical assets. Education and

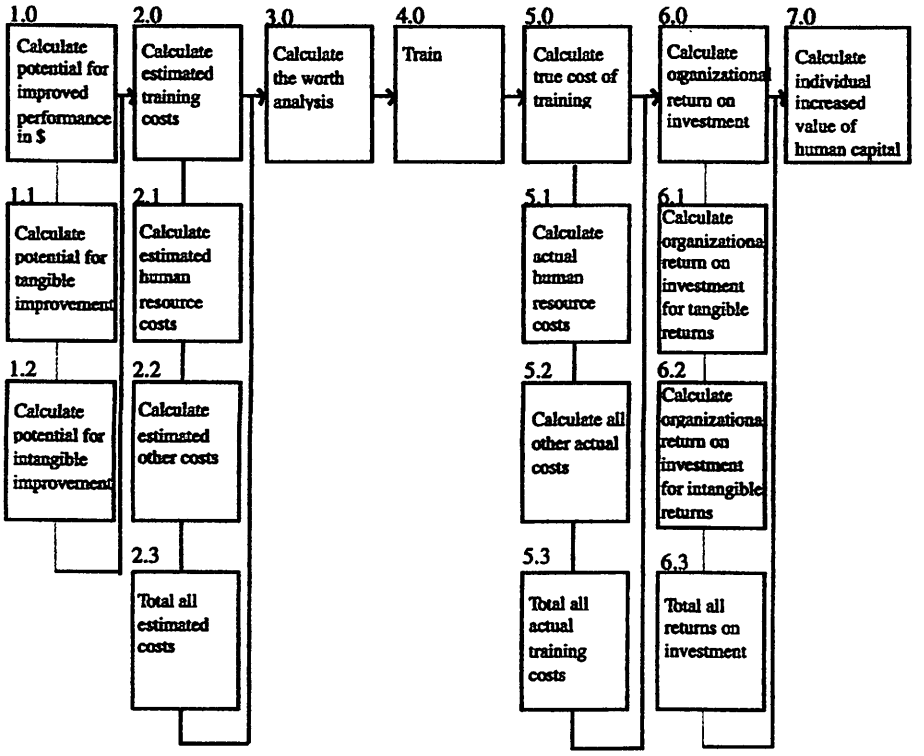

Figure 2. Return on Investment (ROI) in Training Model.

training can increase this value. However, these must focus on organizational needs. Handy, Gordon, Gow, and Randlesome (1990, pp. 60-67) make the following observation: "Many courses are nothing more than entertainment as opposed to carefully planned, strategically useful events... with very little follow-up." They add that "training in business and industry is more concerned with appearances than effectiveness...."

Training managers desire change and state that they want to demonstrate the added value of their efforts. How to do this in a reasonable manner remains a key question for them. What follows provides an answer in the form of a clearly defined procedural model for calculating not only training ROI, but also the increased value of human capital for both the organization and the individual.

A Model for Calculating Training ROI and the Value of Human Capital

The model is the product of a careful sifting of many ROI models and processes. Each model has its particular strengths and weaknesses. Kearsley (1986) presents a number of approaches for calculating ROI, all with their own form of outcomes. What we present here is an operational model that draws primarily from the work of Schneider and Wright (1990), Schneider, Monetta, and Wright (1992), Robinson (1990), Robinson and Robinson (1989), Spencer (1984), and Stolovitch and Keeps (1995). Figure 2 graphically portrays the model and its steps.

The model consists of seven major steps. Below, we describe each step and provide additional explanations and examples as necessary.

Step 1. Calculate Potential for Improved Performance

To perform this step requires conducting an FEA (Harless, 1970; Rossett, 1987, 1990; Stolovitch and Keeps, 1997). In brief, FEA consists of the following steps:

1) Determine purpose of training request (mandated, new system, performance improvement).
2) Identify desired performance and, if relevant, actual performance.
3) Identify feelings related to the desired performance.
4) Identify causes for not achieving desired performance if this is a performance improvement issue.
5) Identify appropriate solutions that are economically relevant, feasible, and acceptable to both organization and targeted performers.

Through careful investigation, the FEA identifies the magnitude, urgency, and value of the performance gap as well as the factors affecting it (environmental, skills/knowledge, emotional/political). It also proposes a basket of intervention solutions that are most appropriate, economic, feasible, and acceptable to achieve desired performance. If training is one of the suitable interventions, the step proceeds to verify the potential for improvement in monetary units (e.g., dollars).

1.1 Certain types of training result in tangible, easily verifiable outcomes. Examples are productivity gains, increased sales, decreased errors. These improvements can often be measured in the short term. Pre- and post-measures of performance with assigned value per unit of gain can establish the potential for improved performance. Example: Reduction of 10% in invoicing errors can result in $800,000 annual savings in investigations, late payments, dispute resolution, customer retention, etc.

Another method for calculating potential for improved performance is by comparing exemplary with typical or average performance. Gilbert (1996) suggests that the potential for improved performance (PIP) is the ratio of the worth of what the exemplary performer produces (W_{ex}) to that of the typical performer (W_t). Hence,

$$PIP = \frac{W_{ex}}{W_t}$$

If an exemplary performer makes $1,000,000 in sales and a typical performer $500,000, PIP = 2.0. If total sales are $80,000,000, the potential for improved performance is $160,000,000 or twice current performance.

1.2 Intangible, less readily counted and measured outcomes of training provide a special challenge for calculating PIP. Examples include listening skills, counseling techniques, systemic thinking. Although less directly measurable, results of improved performance in these areas can produce significant organizational gains. Changes, however, generally take place and can only be measured over the long term.

Schneider and Wright (1990) and Schneider et al. (1992) have proposed a form of survey methodology for estimating the value of improved performance in the so-called "softer" areas. It works as follows:

- Define the major job competency requirements of the persons targeted for training.
  Example:
  Effective use of human resources; budget administration; management and evaluation of work; planning; work coordination; problemsolving.
  The competencies listed should include those that are the subject of the proposed training content.
- Assign a value to each competency expressed as a percentage of time each competency is required in the job.
  Example:

Effective use of human resources	25%
Budget administration	10%
Management and evaluation of work	10%
Planning	15%
Work coordination	25%
Problemsolving	15%
Total	100%

This can be achieved through survey and estimation.

- Within the targeted competency area for training, break this down further into performance requirements. This can be done with supervisors of the target trainee group, the trainee group itself and, if relevant, subordinates and customers.
  Example:
  Under the "planning" set of competencies, one might list five to eight critical performance requirements such as "Develop and monitor long-term work objectives."
- Create a 0–9 scale for each performance requirement. Based on supervisor and trainee estimates, assign a desired performance value, 0 being the lowest, 9 the highest. Assign a current performance estimate as well.
  Example: Planning

	Desired	Current
1. Develop and monitor long-term work objectives.	8	2

- Calculate the difference between desired and current for each required performance. This represents the estimated gap in performance.
  Example:
  Develop and monitor long-term work objectives 8 – 2 = 6
- Total all the desired and current performance requirement estimates as well as the gaps.
  Example: Planning

Desired total score for all 6 performance requirements	48
Current total score for all 6 performance requirements	24
Performance gap	24

  This represents a potential for improved performance of 200%.
- Convert the potential for improved performance to a dollar value.
  Example:
  Planning represents 15% of job time.
  Average salary per trainee is $60,000/year.
  Planning represents 15% of $60,000 or $9,000/year.
  300 trainees = $2,700,000/year salary for planning.
  Current performance is at 50% of required.
  Potential for improved performance = $1,350,000/year.

The seven-step calculation of potential for intangible improvement is based on estimates and on base salaries. As estimates are not perfectly accurate, using a base salary produces a conservative potential for improved performance figure. The survey procedure can be rigorously conducted to increase estimate validity. Trainee fully loaded costs may be used in place of base salary (leading to much higher potential for improved performance figures and closer to actual impact on productivity).

Step 2. Calculate Estimated Training Costs

Training costs include the following:

- Training development costs: human resources*; direct travel and non-travel; media production; consultant fees, licenses.
- Training implementation costs: training facilities and equipment; instructors; trainees; replacement of trainees; lost opportunity; travel; materials; communications; administration.
- Training course maintenance costs. If a course is to be delivered over several years, updating and revisions are usually required at an annual percentage of initial development costs. This can vary from as little as 5% for stable content to 50%+ for highly volatile material.

The total of all development, implementation (which may include on-the-job support and evaluation activities), and maintenance costs represents an estimate of the total training costs.

Step 3. Calculate the Worth Analysis

This step essentially verifies the worth of doing training by comparing costs

* Internal human resource costs should be calculated as "fully loaded." This usually represents approximately three times base salary. An hourly cost is annual fully loaded costs ÷ work days (220 – 230) ÷ 7 or 7.5 productive hours.

against potential outcomes. Worth analysis is performed as follows:

- Estimate the highest number of annual deficiencies or improvements.
- Estimate the lowest number as well.

  Example:

  Current annual number of deficiencies

20,000	40,000
low	high

- Estimate the low and high cost of each deficiency or improvement.

  Example:

  Current annual cost per deficiency

$15.00	$25.00
low	high

- Calculate current annual cost of deficiencies or improvements both low and high.

  Example:

  20,000 x $15 = $300,000 low cost; 40,000 x $25 = $1,000,000 high cost

- Estimate the range of expected deficiencies corrected or improvements obtained from training.

  Example:

  Low = 20%; High = 40%

- Estimate low and high annual value of training.

  $300,000 x 20% = $60,000 low annual value

  $1,000,000 x 40% = $400,000 high annual value

- Multiply the low and high annual values of training by the expected life of the training and divide by the estimated training costs to obtain potential worth of the training effort.

  Low worth:

  $$\frac{\$60{,}000 \times 3 \text{ years}}{\$65{,}000} = \frac{\$180{,}000}{\$65{,}000} = 2.8$$

  High worth:

  $$\frac{\$400{,}000 \times 3 \text{ years}}{\$65{,}000} = \frac{\$1{,}200{,}000}{\$65{,}000} = 18.5$$

  The potential ROI for this training = 2.8–18.5:1

This represents a far greater potential return than on most physical capital. It is in line with published results from training when appropriately selected, applied, and supported on the job.

Step 4. Train

This step includes design, development, implementation, support, and monitoring/evaluation of training.

Step 5. Calculate the True Cost of Training

This step mirrors Step 2, calculate the estimated training costs. However, new actual figures replace previous estimates. As mentioned earlier, the highest costs of training are in the human resources. In Canada, fringe benefits represent an additional 12%–15% of salary. Fully loaded costs for employees are generally calculated on the basis of salary + benefits + overhead (usually 100%– 150% of salary + benefits) divided by productive annual work hours.

Example:

Salary = $60,000
Benefits =$60,000 x 12% or $7,200
Overhead =$67,200 x 125% or $84,000
Fully loaded cost
=$67,000 + $84,000 or $151,000
Cost/day
=$151,000 ÷ 230 work days
or $656.52/day
Cost/hour
=$656.52 ÷ 7.5 or $87.53/hour

The fully loaded cost is approximately 2.5 times the base salary. In the United States, where benefits run as high as 35% of the base salary, the fully loaded factor for calculating personnel costs is 3.0.

Other expenditures sometimes forgotten in estimates that increase the true cost of training include the following: equipment maintenance, shipping, handling and storage of materials, correction of errors caught after implementation, trainer training, course publicity, enrollment, and tracking. Often, the organization delivers more training sessions than planned due to work schedules that reduce class sizes or unexpected turnover.

Step 6. Calculate Organizational ROI

This is difficult to carry out in a fully valid manner. The FEA should have led to the selection of a "basket of interventions" of which training is one. If all the interventions have been implemented in an integrated manner, isolating the impact of training alone becomes almost impossible. Ideally, the organization should capture the costs of all interventions and calculate return globally. However, two realistic options are the following: estimate the percentage of impact likely due from training (establish a range low to high); calculate the value of results against training costs only on projects where training has been the major performance intervention.

6.1 Calculate organizational ROI for tangible improvement. This usually occurs six months or more after all training has been completed. Robinson and Robinson (1989) suggest, as examples, the following types of performance indicators:

Sales:
Size of average sale, sales volume, add-on sales. Non-monetary indicators may include ratio of new accounts to old ones, call-to-close ratio; percentage of objections overcome, items per order.

Supervision and management:
Decreased rejection rates, increased output, reduced absenteeism, reduced tardiness, decreased waste, decreased production costs, reduced cost of new hires, reduced overtime. Non-monetary indicators may include reduced number of grievances, reduced turnover, increased number of employee suggestions adopted, improved climate survey data.

Customer relations:
Accuracy of orders and information, size of orders and transactions, adherence to credit procedures, amount of repeat business, number of transactions per day. Non-monetary indicators may include number of complaints, customer satisfaction, number of referrals.

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Application of the Training ROI Model: A Banking Case

A major objective of the Bank is to assist businesses, mostly small- and medium-sized, with creative financing. In 1994, the Bank announced in its annual report that it was determined to help enterprises in sectors of rapid growth and those heavily engaged in the development or use of new technologies. The Bank promised specific lending programs targeted toward knowledge-based industries, high-growth sectors, and export markets.

This was a significant initiative for a bank traditionally focused on providing loans based on material guarantees such as tangible assets, homes, equipment, buildings, etc. However, as the economy has veered increasingly toward service and high-technology enterprises, there is simply less physical collateral available in the emerging markets sector. The facts speak for themselves. For example, one major region of the Bank's activities is largely dominated by tertiary-sector activities: 81% of all investments and 74.5% of employment.

To meet the challenge and make good on its word, the Bank created a range of new variable-interest loans (new economy loans). Establishing a radically different set of loans is one thing; selling them is quite another. It soon became apparent that account managers required training and other assistance to help them introduce and promote the sale of these loans. In October 1995, the Bank developed a strategy to respond to the performance problems the new variable-interest loans were creating.

The primary audience for selling the loans was its 320 account managers. These loan professionals possess basic skills and knowledge in sales and bank lending procedures. The problems the account managers experienced were in identifying appropriate potential clients and presenting the loans in a credible manner. Account manager performance also affected branch manager performance. Each branch manager supervises 2 to 12 account managers. They also manage the branch and its administrative personnel as well as sell loans. Since they are generally seasoned lenders (10+ years), their own loan quotas are high.

To add to the situation, approximately 50% of account managers were new to the Bank (less than two years experience). Their quotas were stiff, which required that they work hard to meet them. The Bank had also experienced a high turnover of account managers. Each account manager handled approximately 60 accounts.

The strategy the Bank selected to improve sales of new economy loans was to:

- Increase awareness of the new loan types and demonstrate, through examples, that account and branch managers can and do achieve impressive sales (Dormant, in press).
- Create a series of training activities spread out over time to bring about a culture change for account managers with respect to lending. The training was to help account managers find ways to meet and talk with prospective clients, become co-investors in their enterprises, and discover how fertile the emerging markets sector can be for harvesting successful loans.

The desired performance was clear: competence and confidence in making new economy loans. The actual performance was very distant from this ideal state. Specifically, account managers:

- Had difficulty identifying potential emerging market clients.
- Were uncertain about how to communicate and sell these types of loans.
- Perceived the loans as high risk with potential to negatively affect their careers.
- In some instances, believed that these loans might just be a "flavor of the month" and might soon fade away.
- Lacked knowledge about new-economy businesses.
- Were resistant because these loans required three times as much time as traditional ones.
- Were uneasy explaining to clients that the Bank would become a form of co-manager of their businesses.
- Had difficulty selling interest rates of 16%-25% (compared with traditional loans rates of 7%).

Nevertheless, the Bank was determined to move ahead. As the initiative unfolded, the training ROI model came into play. What follows is its application to the project.

Step 1. Calculate Potential for Improved Performance in Dollars

The Bank had decided that between October 1995 and October 1998, the volume of new-economy loans should increase (218% increase), which would generate an additional $5 million in profits. An FEA identified lack of skills and knowledge to be a central cause of current underachievement, although other factors such as marketing and presentation materials, policies, incentives, procedures, and support systems were also lacking. On the basis of the FEA information, (essentially a new system for existing and somewhat new personnel), training was selected as an appropriate intervention.

Step 2. Calculate the Estimated Training Costs

The adopted strategy called for a three-stage roll out.

- Training I: Distribution to account managers of actual new economy

loan cases with communication links established to provide background information and interaction with successful lenders. Forecasted dates: January to March 1996. Cost in time, materials, distributions, and follow-up estimated at $93,859.

- Training II: Distribution of a comprehensive self-instructional package (6 hours) complete with information, exercises, models, job aids, a marketing kit, and self-tests. Forecasted distribution date: June 1996. Cost of development, consultants, subject-matter expertise, management, distribution, and control estimates at $270,266.
- Training III: A two-day session, rolled out by region, involving testing of self-study materials, presentation of success stories and strategies, and group problem solving. Forecasted delivery dates: October to December 1996. Cost of development, delivery, travel, lodging, materials, and trainee time estimated at $625,000.

The total estimated training costs came to $989,285.

Step 3. Calculate the Worth Analysis

Based on the prior steps:

Estimated value=	$5,000,000
Estimated costs=	$ 989,285
Worth=	$5,000,000 = 5.0
	$ 989,285
Estimated ROI over 3 years	= 5.0:1.

Step 4. Train

Due to changes within the Bank, training ran longer than anticipated with slippage of intermediate milestone dates. Training took place between January 1996 and March 1997.

Overall, training occurred as planned. However, unforeseen events affected the process of the training and certainly decreased effectiveness. These included:

- For both Training I and II, many account managers did not clearly perceive the importance of these and viewed the materials as two among many "communications" they received to be examined when time allowed. The timelines and expectations were not clearly defined, resulting in underutilization of the training materials. No incentives were issued to participate in the training.
- A number of account managers were promoted or transferred to new locations. These changes decreased the ability of lenders to sell new-economy loans. It takes approximately six months for an account manager to establish himself or herself in a new territory and create contacts.
- The Bank experienced a 38% turnover in loan personnel in a short period of time.
- Pressure to meet quota deadlines conflicted with time needed for training.
- Training was "homogeneous" and did not account for varied experience and skill levels.

Despite these drawbacks, which point out that even with careful planning and forethought problems occur, training proceeded successfully. Evaluations by participants were positive both in terms of quality of training content and activities. However, the question of impact on bottom-line results remained. For answers, we proceed to the post-training steps of the model.

Step 5. Calculate the True Cost of Training

The project team carefully tracked all costs. The greatest expenses were those related to human resources. Below we present the total costs.

Training I:	$93,859
Training II:	$284,491
Training III:	$595, 390
Total	$973,740

These figures are very close to the $989,285 forecasted in Step 2.

Step 6. Calculate Organizational ROI

Throughout the project, the Bank maintained careful records of new-economy loan volumes and profits. For purposes of this paper, only 89 account managers were studied. Generally, training ROI requires a long time frame to verify impact of training activities. The training began in January 1996 and concluded in March 1997. The data available only account for the account managers who went through Training I and II and remained in their positions so that they had the potential to apply what had been taught. Between January 1996 and January 1997, the 89 account managers increased their volume of new-economy loans 8.64%.

Examining the dollar value of the loans, the increase was 14.69%, representing a profit growth of $215,760. The amortized cost of training for this period (total training cost for Training I and II—as Training III only began in January 1997 and thus could not be included in the analysis—divided by 3 years, the expected life of the training) is $126,117. For the 89 account managers, the training cost is $35,075.

By subtracting the training cost ($35,075) from the profits ($215,760), we identify a net gain of $180,684 for the 89 account managers in 1996 and a training ROI of 615%.

As partial as these results are, the early indicators are of a significantly large organizational ROI for the training investment. Figures at the end of October 1997, with Training III completed, indicate a 53% increase in loan volume for the 89 account managers being tracked.

Step 7. Calculate Individual Value of Human Capital

The average increase in profits for each of the 89 account managers is $215,760 ÷ 89 or $2,424. The new individual human capital account for each of these account managers has increased by this amount.

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In both FEA and this step, it is always wisest to use indicators with which the organization is already familiar and values. Once improvement data have been gathered, they are compared with the training costs. It is essential to amortize costs properly. Hence, when calculating ROI three months into training, include training development costs proportional to the projected life of the training (estimated in Step 3). Similarly, only include implementation costs for those already trained.

6.2. Calculate organizational ROI for intangible improvement. The procedure for this is almost identical to that of Step 1.2 for calculating improvement in required performance. The difference between pre- and post-training performance is converted to dollars. This is then compared to appropriately proportional training costs.

Example: Planning (after 6 months of training activities)

- Post-training total score for all 6 performance requirements 40
- Pre-training total score for all 6 performance requirements 24
- Performance improvement 16

This represents an improvement of 67%.
Planning represents 15% of job time.
Average salary per trainee is $60,000.
Planning (15%) represents $9,000.
Pre-training performance at 50% of requirement = $4,500.
Post-training performance at 83.3% of requirement = $7,500.
Improvement = $3000 per trainee.

$$\text{ROI} = \frac{\text{Value}}{\text{Amortized Cost of Training}} = \frac{\$240,000}{\$105,000} = 2.28$$

The sum of all returns from tangible and intangible training improvements represents the total organizational return on the training investment.

Step 7. Calculate Individual Increased Value of Human Capital

Each employee possesses a human-capital account, usually established with an initial value equal to his or her salary (although benefits can be included). As the employee's competencies increase, the value of the account rises. This serves to track the value of the individual human-capital asset and is not necessarily given out in salary and bonuses to the employee. However, too great a discrepancy between what is in the account and compensation can result in the employee leaving the organization to obtain more money. On the other hand, not all can be paid to the employee as the company assumes the risk cost associated with the training. The employee's individual account is increased by the value training has added to his/her current human capital account.

Example: Employee X Human Capital Account

Current value	$60,000
Increased post training performance	$ 3,000
New value	$63,000

In some cases, especially for new hires, the initial account value may be less than the base salary, but is paid out in anticipation of future increased performance capability.

In summary, this section has presented a model for calculating training ROI. As noted at the outset of the section, FEA is required to determine whether or not a need for training exists. Tangible or intangible improvement, this model permits calculation of training ROI. While we may apply the model to intuitively selected training, the first three steps will not be relevant. The results will also remain questionable.

The training ROI model was applied to a real-world case. Each of the steps was performed as prescribed. At each step, the necessary calculations were made. The test of the model in the banking context demonstrates its viability.

Conclusions and Recommendations

Training, inappropriately selected, may or may not yield valued organizational and personal performance results. It is a "crap shoot" with low probabilities of success. Key to acquiring effective results from training is FEA that allows organizations to determine whether training is necessary or sufficient to achieve desired results.

Training, appropriately selected, can lead to astounding performance results. Training, well selected, designed, and supported, increases the ability of people to perform. It raises the value of the human capital an organization possesses and this benefits both organization and individual performer. As stated earlier, human capital in the knowledge economy is true wealth. It has greater potential to generate productivity and profits than physical capital.

The training ROI model presented in this paper is a tool. It guides decision-makers and instructional designers to do the right things with respect to training. It also generates meaningful figures that clearly demonstrate the value of the training effort. What it uncovers also guides decisionmakers in future training ventures.

The case application at the Bank illustrates a number of valuable lessons for training:

- Where a need for training is identified, and the training is well designed and implemented, the results are demonstrably beneficial to the organization.
- Training ROIs are often dramatic, with ratios often exceeding 10:1 (Phillips, 1997).
- Even applied to a partially completed training initiative, the model can help monitor early results.

- Despite careful planning of training projects, the dynamic context of organizational environments can drastically affect results. The Bank did not foresee major shifts in structure and personnel that would impact training outcomes.
- The model offers a valuable tool to training managers. It answers the questions: "How do I calculate training ROI?" and "What do I measure?"

Based on the content of this article and in particular the training ROI model, the authors recommend that:

- Other organizations critically examine their training activities and in the light of the suggestions made here, conduct FEAs and training ROI studies.
- Organizations try out the part of the model dealing with intangible improvement. This presents the greatest challenge and would be extremely worthwhile to test and document.
- Organizations, in general, document their FEAs and applications of the training ROI model. The research and professional literatures contain too few systematically documented examples.
- Through experimenting with the model, improve upon it and make it easier to apply in varied organizational contexts.

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Harold is a past president of ISPI, former editor of Performance Improvement, *editorial board member of several human resource and performance technology journals, and editor of the Jossey-Bass publication,* Handbook of Human Performance Technology: A Comprehensive Guide for Analyzing and Solving Performance Problems in Organizations. *He is a frequent keynote speaker and presenter for major companies and professional associations. Harold has won numerous awards for his contributions to instructional and performance technology, including ISPI's highest award, Member for Life. Dr. Stolovitch may be reached by phone: (310) 286-2722 or (514) 488-7722 or by email: hsahsek@psinet.com.*

Jean Gabriel Maurice holds a Ph.D. from the Université de Montréal, where his major focus of study was on human performance technology and the design of systems that help individuals and organizations improve results. He has conducted considerable research on models for calculating return on performance intervention investments and means for calculating and reporting the value of human capital in organizational settings. Jean Gabriel also possesses an undergraduate degree in business and a master's degree in public administration. His professional career has included accounting and administrative positions in financial institutions in France and Germany and a university faculty position in Canada. Current professional work includes the design and development of educational and training programs for business and industry as well as consulting to a variety of European and North American organizations on human capital issues. Jean Gabriel may be reached by phone or fax: 011-33-160660195.