

Measuring ROI: The Process, Current Issues, and Trends*

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Measuring the return on investment (ROI) in learning and development, and performance improvement has earned a place among the critical issues in the Human Resource Development (HRD) field. For almost a decade, ROI has been on conference agendas and at professional meetings. Journals and newsletters regularly embrace the concept with increasing print space. At ASTD, a 500-member professional organization has been organized (the ROI Network) to exchange information on ROI. More than a dozen books provide significant coverage of the topic. Even top executives have stepped up their appetite for ROI information.

Measuring ROI is a topic of much debate. It is rare for any topic to stir up emotions to the degree the ROI issue does. Return on investment is characterized as flawed and inappropriate by some, while others describe it as the only answer to their accountability concerns. The truth probably lies somewhere between. Understanding the drivers for the ROI Methodology and the inherent weaknesses and advantages of ROI makes it possible to take a rational approach to the issue and implement an approximate mix of evaluation strategies that includes ROI.

Although the interest in the topic has heightened and much progress has been made, it is still an issue that challenges even the most sophisticated and progressive HRD departments. While some professionals argue that it is not possible to calculate the ROI, others quietly and deliberately proceed to develop measures and ROI calculations. The latter group is gaining tremendous support from the senior management team and is making much progress. Regardless of the position taken on the issue, the reasons for measuring the return still exist. Almost all HRD professionals share a concern that they must eventually show a return on their learning investment. Otherwise, funds may be reduced or the HRD department may not be able to maintain or enhance its present status and influence in the organization.

The dilemma surrounding the ROI process is a source of frustration with many senior executives — even within the HRD field itself. Most executives realize that learning is a basic necessity when organizations are experiencing significant growth or increased competition. They intuitively feel that there is value in providing learning opportunities, logically anticipating a payoff in important bottom-line measures such as productivity improvements, quality enhancements, cost reductions, and time savings. Yet the frustration comes from the lack of evidence to show that the process is really working. While the payoffs are assumed to exist and learning programs appear to be necessary, more evidence is needed or funding may be adjusted in the future. The ROI Methodology represents the most promising way to show this accountability in a logical, rational approach.

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Current Status

One thing is certain in the ROI debate – it is not a fad. As long as there is a need for accountability of learning expenditures and the concept of an investment payoff is desired, ROI will be utilized to evaluate major investments in learning and performance improvement.

A “fad” is a new idea or approach or a new spin on an old approach. The concept of ROI has been used for centuries. The 75th anniversary issue of *Harvard Business Review* (HBR) traced the tools used to measure results in organizations (Sibbet, 1997). In the early issues of HBR, during the 1920s, ROI was the emerging tool to place a value on the payoff of investments. With increased adoption and use, ROI is here to stay. As highlighted in Table 1, today, over thousands of people represent organizations around the world are routinely developing ROI calculations for learning and performance improvement programs.

ROI by the Numbers

- The ROI Methodology has been refined over a 25-year period.
- The ROI Methodology has been adopted by over 2,000 organizations in manufacturing, service, nonprofit, government, and educational settings.
- 5,000 studies are developed each year using the ROI Methodology.
- 100 case studies are published on the ROI Methodology.
- 3,000 individuals have participated in the ROI Certification process.
- Organizations in 44 countries have implemented the ROI Methodology.
- 15 books have been developed to support the process.
- A 600-member professional network has been formed to share information.

Table 1. Summary of the Current Status of ROI use.

Specific applications began in a manufacturing sector, where ROI was easily developed. It migrated to the service sector, health care, the public sector, and now the educational sector is interested in ROI. Recent applications involve measuring the return on investment of a graduate degree program, in-service teacher training, and continuing education programs at universities. According to *Training* magazine, the use of ROI in training organizations continues to grow. Of those listed as the Top 100 Organizations in 2004, 75% are using the ROI Methodology (Top 100, 2004). A major study by the Corporate Executive Board indicated that ROI is the fastest growing metric in learning and development. It is also the metric that has the widest gap between actual use and desired use, which underscores the many misconceptions about ROI (Drimmer, 2002).

It is estimated that 5,000 studies are conducted each year globally by the organizations using the ROI Methodology. This number is based on the number of organizations that have participated directly in the certification for the ROI Methodology. At least 100 of these studies have been published in various case books and reference books on ROI. Some of these are included in journals and trade magazines. Table 2 shows 15 studies representing a variety of applications. This listing underscores the variety of applications, settings, and results that can be achieved. It should be noted that these represent a very high ROI, which is not always the case; these are more positive examples of the use of the methodology. Many of the published ROI studies have very high ROI values, representing

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some of the most successful studies. High ROI values are achieved only when the learning program is needed, addresses a specific performance gap, and is applied and supported in the workplace.

Sample of Published ROI Studies			
Case Study Name	Measuring the ROI:	Key Impact Measures:	ROI
Cracker Box	Performance Management (Restaurant Chain)	A variety of measures, such as productivity, quality, time, costs, turnover, and absenteeism	298% ¹
Federal Information Agency	Internal Graduate Degree Program (Federal Agency)	Retention, individual graduate projects	153% ⁴
Healthcare, Inc.	Sexual Harassment Prevention (Health Care Chain)	Complaints, turnover, absenteeism, job satisfaction	1052% ²
Imperial National Bank	Executive Leadership Development (Financial)	Team projects, individual projects, retention	62% ²
International Car Rental	First Level Leadership Development (Auto Rental Company)	Various measures – at least two per manager	105% ⁷
MetroTransit	Absenteeism Control/Reduction Program (Major City)	Absenteeism, customer satisfaction	882% ²
Midwest Electric	Stress Management Program (Electric Utility)	Medical costs, turnover, absenteeism	320% ²
National Crushed Stone	Skill-Based Pay (Construction Materials Firm)	Labor costs, turnover, absenteeism	805% ²
National Steel	Safety Incentive Plan (Steel Company)	Accident frequency rate, accident severity rates	379% ²
Nations Hotel	Executive Coaching (Hotel Chain)	Cost reduction, sales growth, operating efficiency, retention, and customer satisfaction	221% ⁵
Nextel Communications	Diversity (Communications Company)	Retention, employee satisfaction	163% ⁶
Southeast Corridor Bank	Retention Improvement (Financial Services)	Turnover, staffing levels, employee satisfaction	258% ³
United Petroleum	E-Learning (Petroleum)	Sales	206% ²
VA Sunshine Healthcare Network	Competency Development (Veteran's Health Administration)	Time savings, work quality, faster response	159% ⁴

References for Published Studies

1. *In Action: Measuring Return on Investment*, Volume 3. Patricia P. Phillips, Editor; Jack J. Phillips, Series Editor. American Society for Training and Development, Alexandria, VA, 2001.
2. *The Human Resources Scorecard: Measuring the Return on Investment*. Jack Phillips, Ron D. Stone, Patricia P. Phillips. Butterworth-Heinemann, Woburn, MA, 2001.
3. *In Action: Retaining Your Best Employees*. Patricia P. Phillips, Editor; Jack J. Phillips, Series Editor. American Society for Training and Development and the Society for Human Resource Management, Alexandria, VA, 2002.
4. *In Action: Measuring ROI in the Public Sector*. Patricia P. Phillips, Editor. American Society for Training and Development, Alexandria, VA, 2002.
5. *In Action: Coaching for Extraordinary Results*. Darellyn J. Mitch, Editor; Jack J. Phillips, Series Editor. American Society for Training and Development, Alexandria, VA, 2002.
6. *In Action: Implementing Training Scorecards*. Lynn Schmidt, Editor; Jack J. Phillips, Series Editor. American Society for Training and Development, Alexandria, VA, 2003.
7. *The Leadership Scorecard*, Jack J. Phillips and Lynn Schmidt, Butterworth-Heinemann, Woburn, MA, 2004.

Table 2. Sample of Published ROI Studies.
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At least 3,000 individuals have attended a five-day certification workshop to learn how to implement the ROI Methodology. Most of the individuals who have followed through with projects have become certified in ROI implementation. These individuals develop a particular project as part of the week-long workshop, plan the evaluation, and communicate it to team members. The certification focuses on building competencies in 10 skill areas as shown in Table 3 (Phillips, 2004). These certification workshops have been conducted in most major cities in the USA and over a dozen countries outside the US.

Skill Areas for Certification

- Planning for ROI calculations
- Collecting evaluation data
- Isolating the effects of training
- Converting data to monetary values
- Monitoring program costs
- Analyzing data including calculating the ROI
- Presenting evaluation data
- Implementing the ROI process
- Providing internal consulting on ROI
- Teaching others the ROI process

Table 3. Ten skill sets for certification.

Measuring return on investment is becoming a global issue. To-date, 44 countries have implemented the ROI Methodology. These countries include all major continents: Ireland, England, Holland, Italy, Germany, Denmark, South Africa, Chile, Peru, Australia, New Zealand, Singapore, Malaysia, Japan, India, and Canada, among others. Implementation is defined as a particular partnering organization establishing a consulting practice for the ROI Methodology in partnerships to present workshops and provide consulting services. Also, as part of this implementation, an article on the ROI Methodology is usually featured in a prominent human resources and training and development publication in that country.

To-date, 15 books have been developed to support the ROI Methodology; five complete casebooks are dedicated to the process – two of these have become the Number 1 and Number 2 all-time best sellers for the ASTD.

Perhaps one of the most visible signs of acceptance of the ROI Methodology is the ASTD ROI Network, which now claims over 600 members. Founded in 1996, the ROI Network was formed by a group of practitioners involved in implementing the ROI Methodology. The purpose of the organization is to promote the application and use of ROI and exchange information on ROI tools, templates, practices, and applications. In 2002, the Network was acquired by ASTD and operates as the ASTD ROI Network. The Network shares information through newsletters, list serves, chat rooms, and conferences (ASTD.org).

Without a doubt, the ROI Methodology is now becoming a mainstream tool to show the impact of human resources, learning and development, and performance improvement.

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Why ROI?

There are good reasons why return on investment has gained acceptance. Although the viewpoints and explanations may vary, some things are very clear. The key issues are outlined here.

Increased Budgets. Most training and development budgets have continued to grow year after year. As expenditures grow, accountability becomes a more critical issue. A growing budget creates a larger target for internal critics, often prompting the development of an ROI Methodology. The function, department, or process showing the most value will likely receive the largest budget increase.

The Ultimate Level of Evaluation. The ROI Methodology adds a fifth level to the four levels of evaluation, which were developed almost 40 years ago (Kirkpatrick, 1975). Table 4 shows the five level framework. At Level 1, *Reaction and Planned Action*, satisfaction from program participants is measured, along with a listing of how they planned to apply what they have learned. At Level 2, *Learning*, measurements focus on what participants learned during the program using tests, skill practices, role plays, simulations, group evaluations, and other assessment tools. At Level 3, *Application and Implementation*, a variety of follow-up methods is used to determine if participants applied what they learned on the job. At Level 4, *Business Impact*, the measurement focuses on the changes in the impact measures linked to the program. Typical Level 4 measures include output, quality, costs, time, and customer satisfaction. At Level 5, *Return on Investment* (the ultimate level of evaluation), the measurement compares the program's monetary benefits with the program costs. For many, the evaluation cycle is not complete until the Level 5 evaluation is conducted.

Five Level Framework	
Level	Brief Description
1. Reaction & Planned Action	Measures participant's reaction to the program and outlines specific plans for implementation.
2. Learning	Measures skills, knowledge, or attitude changes.
3. Application and Implementation	Measures changes in behavior on-the-job and specific application and implementation.
4. Business Impact	Measures business impact of the program.
5. Return on Investment	Compares the monetary value of the results with the costs for the program, usually expressed as a percentage.

Table 4. Five Level Framework

ROI is a Familiar Term. The business management mindset of many current learning and development managers causes them to place more emphasis on economic issues within the function. Today's CLO is more aware of bottom-line issues in the organization and more knowledgeable of operational and financial concerns. This new "enlightened" manager often takes a business approach to learning and development, with ROI as part of the strategy. ROI is a familiar term and concept for these managers, particularly those with business administration and management degrees. They

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have studied ROI in their academic preparation where ROI is used to evaluate the purchase of equipment, building a new facility, or buying a new company. Consequently, they understand and appreciate ROI and are pleased to see the ROI Methodology applied to the evaluation of learning and performance improvement.

Accountability Trend. There has been a persistent trend of accountability in organizations all over the globe. Every support function is attempting to show its worth by capturing the value that it adds to the organization. From the accountability perspective, the learning and development function should be no different from the other functions – it must show its contribution to the organization.

Top Executive Requirement. ROI is now taking on increased interest in the executive suite. Top executives who watched their training and learning budgets continue to grow without the appropriate accountability measures have become frustrated and, in an attempt to respond to the situation, have turned to ROI. Top executives are now demanding return on investment calculations from departments and functions where they were not previously required. For years, training and development managers convinced top executives that the impact of training couldn't be measured, at least at the monetary contribution level. Yet, many of the executives are now aware that it can and is being measured in many organizations. Top executives are subsequently demanding the same accountability from their training and development functions.

ROI Best Practices

With the acceptance of ROI as a mainstream measurement tool for most learning and development functions, the debate has shifted from whether or not ROI should be conducted to how it should be conducted on a consistent, standardized basis. As a result, the best practices for ROI have been developed. Table 5 shows the best practices collected from data involving several hundred organizations using the ROI process. These are the organizations that have specifically determined to implement the ROI Methodology and have sent one or more individuals through the ROI certification. The best practices reflect their use of the ROI Methodology and are explained in more detail later. These practices reveal the comprehensive, integrated approach that is feasible, realistic, and achievable within most budget constraints.

ROI Best Practices

1. The ROI Methodology is implemented as a process improvement tool and not a performance evaluation tool for the learning/development staff.
2. ROI impact studies are conducted very selectively, usually involving 5-10% of programs.
3. A variety of data collection methods are used in ROI analysis.
4. For a specific ROI evaluation, the effects of learning/development are isolated from other influences.
5. Business impact data are converted to monetary values.
6. ROI evaluation targets are developed, showing the percent of programs evaluated at each level.
7. The ROI Methodology generates a micro level scorecard.
8. ROI Methodology data are being integrated to create a macro scorecard for the learning/development function
9. The ROI Methodology is being implemented for about 3-5% of the learning/development budget.
10. ROI forecasting is being implemented routinely.
11. The ROI Methodology is used as a tool to strengthen/improve the learning/education process.

Table 5. ROI Best Practices.

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Barriers to ROI Implementation

Although progress has been made in the implementation of ROI, significant barriers inhibit the implementation of the concept. Some of these barriers are realistic while others are actually myths based on false perceptions. Each barrier is briefly described in this following section.

Costs and Time. The ROI Methodology adds additional costs and time to the evaluation process of programs, although the added amount is not excessive. A comprehensive ROI process can be implemented for 3% - 5% to the overall training budget. This barrier alone often stops many ROI implementations early in the process. The additional investment in ROI could perhaps be offset by the additional results achieved from these programs and the elimination of unproductive or unprofitable programs.

Lack of Skills and Orientation for HRD Staff. Many learning and performance improvement staff members neither understand ROI nor do they have the basic skills necessary to apply the process within their scope of responsibilities. Measurement and evaluation is not usually part of the preparation for the job. Also, the typical learning program does not focus on results, but more on the learning process. Staff members attempt to measure results by measuring learning. Consequently, a tremendous barrier to implementation is the change needed for the overall orientation, attitude, and skills of the HRD staff.

Faulty Needs Assessment. Many of the current programs do not have an adequate needs assessment. Some of these programs have been implemented for the wrong reasons based on management requests or efforts to chase a popular fad or trend in the industry. If the program is not needed, the benefits from the program will be minimal. An ROI calculation for an unnecessary program will likely yield a negative value. This is a realistic barrier for many programs.

Fear. Some L&D departments do not pursue ROI because of fear of failure or fear of the unknown. Fear of failure appears in many ways. Designers, developers, facilitators, and program owners may be concerned about the consequence of negative ROI. They fear that ROI will be a performance evaluation tool instead of a process improvement tool. Also, the ROI process will stir up the traditional fear of change. This fear, often based on unrealistic assumptions and a lack of knowledge of the process, becomes a realistic barrier to many ROI implementations.

Discipline and Planning. A successful ROI implementation requires much planning and a disciplined approach to keep the process on track. Implementation schedules, evaluation targets, ROI analysis plans, measurement and evaluation policies, and follow-up schedules are required. The learning team may not have enough discipline and determination to stay on course. This becomes a barrier, particularly when there are no immediate pressures to measure the return. If the current senior management group is not requiring ROI, the learning team may not allocate time for planning and coordination. Also, other pressures and priorities often eat into the time necessary for ROI implementation. Only carefully planned implementation will be successful.

False Assumptions. Many L&D staff members have false assumptions about the ROI process, which keep them from attempting ROI. Typical of these assumptions are the following:

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- The impact of learning cannot be accurately calculated.
- Operating managers do not want to see the results of learning and development expressed in monetary values.
- If the CEO does not ask for the ROI, he or she is not expecting it.
- “I have a professional, competent staff. Therefore, I do not have to justify the effectiveness of our programs.”
- Learning is a complex, but necessary activity. Therefore, it should not be subjected to an accountability process.

These false assumptions form realistic barriers that impede the progress of ROI implementation.

Benefits of ROI

Although the benefits of implementing the ROI Methodology may appear obvious, several distinct and important benefits can be realized.

Measure Contribution. The ROI Methodology is the most accurate, credible, and widely used process to show the impact of learning. The learning team will know the specific contribution from a select number of programs. An ROI study will determine if the benefits of the program, expressed in monetary values, have outweighed the costs. It will determine if the program made a contribution to the organization.

Establish Priorities. Calculating ROI in different areas will determine which programs contribute the most to the organization, allowing priorities to be established for high impact learning. Successful programs can be expanded into other areas – if the same need is there – ahead of other programs. Inefficient programs can be designed and redeployed. Ineffective programs may be discontinued.

Focus on Results. The ROI Methodology is a results-based process which brings a focus on results with all programs, even for those not targeted for an ROI calculation. The process requires instructional designers, facilitators, participants, and support groups to concentrate on measurable objectives: what the program is attempting to accomplish. Thus, this process has the added benefit of improving the effectiveness of all learning and development programs.

Earn Respect of Senior Executives and Sponsor. Developing the ROI information is one of the best ways to earn the respect of the senior management team and the sponsor (the person who really cares about the program). Senior executives have a never-ending desire to see ROI. They will appreciate the efforts to connect training to business impact and show the actual monetary value. It makes them feel comfortable with the process and makes their decisions much easier. Sponsors who often support, approve, or initiate training and development, and performance improvement programs see the ROI as a breath of fresh air. They actually see the value of the learning in terms they understand and appreciate.

Alter Management Perceptions of Learning and Development. The ROI Methodology, when applied consistently and comprehensively, can convince the management group that learning is an investment and not an expense. Managers will see L&D as making a viable contribution to their objectives, thus increasing the respect for the function. This is an important step in building a partnership with management and increasing management support for L&D.

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These key benefits, inherent with almost any type of impact evaluation process, make the ROI process an attractive challenge for the human resource development function.

The ROI Model

The calculation of the return on investment follows the basic model illustrated in Figure 1, where a potentially complicated process can be simplified with sequential steps. The ROI model provides a systematic approach to ROI calculations. A step-by-step approach keeps the process manageable so that users can tackle one issue at a time. The model also emphasizes that this is a logical, systematic process that flows from one step to another. Applying the model provides consistency from one ROI calculation to another. Each step of the model is briefly described here.

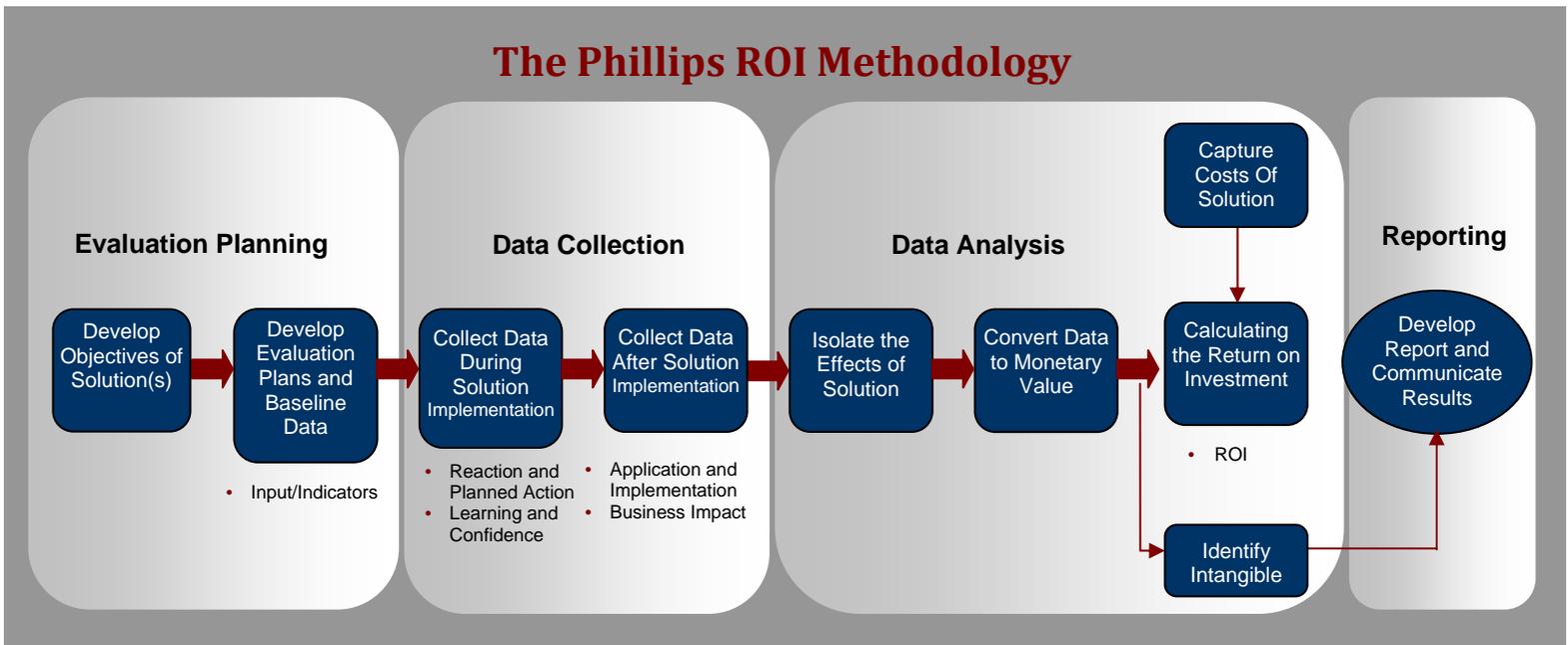


Figure 1. The ROI Model.

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Evaluation Planning

Three specific elements are important to evaluation success and are outlined in this section.

Purpose. Although evaluation is usually undertaken to improve the HRD process, several distinct purposes can be identified. Evaluation is planned to:

- Improve the quality of learning and outcomes
- Determine if a program is accomplishing its objectives
- Identify the strengths and weaknesses in the learning process
- Determine the cost/benefit analysis of an HRD program
- Assist in marketing HRD programs in the future
- Determine if the program was appropriate for the target audience
- Establish a database, which can assist in making decisions about the programs
- Establish priorities for funding

For most programs, multiple evaluation purposes are pursued.

Feasibility. During the planning stage, the feasibility for a business impact or ROI study should be examined. Relevant questions to address are:

- What specific measures have been influenced with this program?
- Are those measures readily available?
- Can the effect of the program on those measures be isolated?
- Are the costs of the program readily available?
- Will it be practical and feasible to discuss costs?
- Can the impact data be converted to monetary value?
- Is the actual ROI needed or necessary?

These and other questions are important to examine during the planning process to ensure that the evaluation is appropriate for the program.

Objectives of Programs. Learning and development programs are evaluated at different levels as briefly described earlier. Corresponding to the levels of evaluation are levels of objectives:

- Reaction and Satisfaction objectives (Level 1)
- Learning objectives (Level 2)
- Application objectives (Level 3)
- Impact objectives (Level 4)
- ROI objectives (Level 5)

Before the ROI evaluation begins, the program objectives must be identified or developed. Program objectives link directly to the front-end analysis. The objectives form the basis for determining the depth and the level of evaluation. Historically, learning objectives are routinely developed. Application and impact objectives are not always in place, but are necessary for the proper focus on results.

Tied very closely to setting objectives is the timing of the data collection. In some cases, pre-program measurements are taken to compare with post-program measures and, in some cases, multiple measures are taken. In other situations, pre-program measurements are not available and specific

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follow-ups are still taken after the program. The important issue is to determine the timing for the follow-up evaluation.

Evaluation Plans

To complete the planning process, three simple planning documents are developed: the Data Collection Plan, the ROI Analysis Plan, and the Project Plan. These documents should be completed before the evaluation project is implemented — ideally, before the program is designed or developed. Appropriate up-front attention will save much time later when data are actually collected. The documents are usually included in the published case studies.

Collecting Data

Data collection is central to the ROI Methodology. Both hard data (e.g., output, quality, cost, and time) and soft data (e.g., job satisfaction and customer satisfaction) are collected. Data are collected using a variety of methods including the following:

- **Surveys** are taken to determine the extent to which participants are satisfied with the program, have learned skills and knowledge, and have utilized various aspects of the program.
- **Questionnaires** are usually more detailed than surveys and can be used to uncover a wide variety of data. Participants provide responses to several types of open-ended and forced response questions.
- **Tests** are conducted to measure changes in knowledge and skills (Level 2). Tests come in a wide variety of formal (criterion-referenced tests, performance tests and simulations, and skill practices) and informal (facilitator assessment, self assessment, and team assessment) methods.
- On-the-job **observation** captures actual skill application and use. Observations are particularly useful in customer service training and are more effective when the observer is either invisible or transparent.
- **Interviews** are conducted with participants to determine the extent to which learning has been utilized on the job.
- **Focus groups** are conducted to determine the degree to which a group of participants has applied the training to job situations.
- **Action plans and program assignments** are developed by participants during the program and are implemented on the job after the program is completed. Follow-ups provide evidence of program success.
- **Performance contracts** are developed by the participant, the participant's supervisor, and the facilitator who all agree on job performance outcomes.
- **Business Performance monitoring** is useful where various performance records and operational data are examined for improvement.

The important challenge in data collection is to select the method or methods appropriate for the setting and the specific program, within the constraints of the organization.

Isolating the Effects of Learning and Development

An often-overlooked issue in most evaluations is the process of isolating the effects of learning and development. In this step of the process, specific strategies are explored, which determine the

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amount of output performance directly related to the program. This step is essential because there are many factors that will usually influence performance data after a learning and development program is conducted. Specific strategies taken in this step will pinpoint the amount of improvement directly related to the program, resulting in increased accuracy and credibility of ROI calculations. The following techniques have been utilized by organizations to tackle this important issue:

- A **control group** arrangement is used to isolate learning's impact. With this strategy, one group participates in a program, while another similar group does not. The difference in the performance of the two groups is attributed to the program. When properly setup and implemented, the control group arrangement is the most effective way to isolate the effects of learning and development.
- **Trend lines** are used to project the values of specific output variables as if the learning program had not been undertaken. The projection is compared to the actual data after the program is conducted, and the difference represents the estimate of the impact of learning. Under certain conditions, this strategy can accurately isolate the impact of learning.
- When mathematical relationships between input and output variables are known, a **forecasting model** is used to isolate the effects of learning. With this approach, the output variable is predicted using the forecasting model with the assumption that no learning program is conducted. The actual performance of the variable after the program is conducted is compared with the forecasted value, which results in an estimate of the impact of learning.
- **Participants** estimate the amount of improvement related to the learning and development program. With this approach, participants are provided with the total amount of improvement, on a pre and post program basis, and are asked to indicate the percent of the improvement that is actually related to the program.
- **Supervisors or managers** estimate the impact of learning on the output variables. With this approach, supervisors or managers are presented with the total amount of improvement and are asked to indicate the percent related to learning. The estimates are adjusted for the error of the estimates.
- **Experts** provide estimates of the impact of learning on the performance variable. Because the estimates are based on previous experience, the experts must be familiar with the type of program and the specific situation.
- When feasible, **other influencing factors** are identified and the impact estimated or calculated, leaving the remaining, unexplained improvement attributed to learning.
- In some situations, **customers** provide input on the extent to which training or learning has influenced their decision to use a product or service. Although this strategy has limited applications, it can be quite useful in customer service and sales training.

Collectively, these techniques provide a comprehensive set of tools to tackle this important issue.

Converting Data to Monetary Values

To calculate the return on investment, business impact data collected in the evaluation are converted to monetary values and compared to program costs. This requires a value to be placed on each unit of data connected with the program. Several techniques are available to convert data to monetary values:

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- **Output data** are converted to profit contribution or cost savings, based on their unit contribution to profit or the unit contribution to cost reduction. Standard values for these items are readily available in most organizations.
- The **cost of quality** is calculated and quality improvements are directly converted to cost savings. Standard values for these items are available in many organizations.
- For programs where employee time is saved, the **participants' wages and employee benefits** are used to develop the value for time. This is a standard formula in most organizations.
- **Historical costs**, developed from cost statements, are used when they are available for a specific variable. In this case, organizational cost data establishes the specific monetary cost savings of an improvement.
- When available, **internal and external experts** may be used to estimate a value for an improvement.
- **External databases** are sometimes available to estimate the value or cost of data items. Research, government, and industry databases – usually available on the internet – can provide important information for these values.
- **Participants** estimate the value of the data item. For this approach to be effective, participants must be capable of providing a value for the improvement.
- **Supervisors and managers** provide estimates when they are both willing and capable of assigning values to the improvement.
- **Soft measures are linked, mathematically, to other measures** that are easier to measure and value. This approach is particularly helpful when establishing values for measures that are very difficult to convert to monetary values, but have linkages to other measures.
- **HRD staff** estimates may be used to determine a value of an output data item.

This step in the ROI model is necessary for determining the monetary benefits from a learning program. The process is challenging, particularly with soft data, but can be methodically accomplished using one or more of these strategies.

Tabulating Cost of the Program

The other part of the equation on a cost/benefit analysis is the program cost. Tabulating the costs involves monitoring or developing all of the related costs of the program targeted for the ROI calculation. Among the cost components that should be included are:

- the cost to design and develop the program, possibly prorated over the expected life of the program;
- the cost of all program materials provided to each participant;
- the cost for the instructor/facilitator, including preparation time as well as delivery time;
- the cost of the facilities for the learning program;
- travel, lodging, and meal costs for the participants, if applicable;
- salaries, plus employee benefits of the participants who participated in the learning program; and
- administrative and overhead costs of the L&D function, allocated in some convenient way.

In addition, specific costs related to the needs assessment and evaluation should be included, if appropriate. The conservative approach is to include all of these costs so that the total is fully loaded.

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Calculating the Return on Investment

The return on investment is calculated using the program benefits and costs. The benefits/cost ratio is the program benefits divided by cost. In formula form it is:

$$\text{BCR} = \frac{\text{Program Benefits}}{\text{Program Costs}}$$

The return on investment uses the net benefits divided by program costs. The net benefits are the program benefits minus the costs. In formula form, the ROI becomes:

$$\text{ROI (\%)} = \frac{\text{Net Program Benefits}}{\text{Program Costs}} \times 100$$

This is the same basic formula used in evaluating other investments where the ROI is traditionally reported as earnings divided by investment.

Identifying Intangible Benefits

In addition to tangible, monetary benefits, most learning programs will have intangible, non-monetary benefits. The ROI calculation is based on converting both hard and soft data to monetary values. Intangible benefits may include items such as:

- increased job satisfaction,
- increased organizational commitment,
- improved teamwork,
- improved customer service,
- reduced complaints, and
- reduced conflicts.

During data analysis, every attempt is made to convert all data to monetary values. All hard data such as output, quality, and time are converted to monetary values. The conversion of soft data is attempted for each data item. However, if the process used for conversion is too subjective or inaccurate, and the resulting values lose credibility in the process; then the data are listed as an intangible benefit with the appropriate explanation. For some programs, intangible, non-monetary benefits are extremely valuable, often carrying as much influence as the hard data items.

Reporting Data

The final step in the ROI model is reporting. This very critical step often lacks the proper attention and planning to ensure that it is successful. This step involves developing appropriate information in impact studies and other brief reports. The heart of the step includes the different techniques used to communicate to a wide variety of target audiences. In most ROI studies, several audiences are interested in and need the information. Careful planning to match the communication method with the audience is essential to ensure that the message is understood and appropriate actions follow.

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Operating Standards and Philosophy

To ensure consistency and replication of impact studies, operating standards must be developed and applied as the process model is utilized to develop ROI studies. It is extremely important for the results of a study to stand alone and not vary depending on the individual conducting the study. The operating standards detail how each step and issue of the process will be addressed. Table 6 shows the 12 guiding principles that form the basis for the operating standards.

Guiding Principles

1. When a higher-level evaluation is conducted, data must be collected at lower levels.
2. When an evaluation is planned for a higher level, the previous level of evaluation does not have to be comprehensive.
3. When collecting and analyzing data, use only the most credible source.
4. When analyzing data, choose the most conservative among the alternatives.
5. At least one method must be used to isolate the effects of the solution.
6. If no improvement data are available for a population or from a specific source, it is assumed that little or no improvement has occurred.
7. Estimates of improvements should be adjusted (discounted) for the potential error of the estimate.
8. Extreme data items and unsupported claims should not be used in ROI calculations.
9. Only the first year of benefits (annual) should be used in the ROI analysis of short-term solutions.
10. Costs of the solution should be fully loaded for ROI analysis.
11. Intangible measures are defined as measures that are purposely not converted to monetary values.
12. The results from the ROI Methodology must be communicated to all key stakeholders.

Table 6. The Guiding Principles.

These guiding principles not only serve as a way to consistently address each step, but also provide a much needed conservative approach to the analysis. A conservative approach may lower the actual ROI calculation, but it will build credibility with the target audience.

Implementation Issues

A variety of environmental issues and events will influence the successful implementation of the ROI process. These issues must be addressed early to ensure that the ROI process is successful. Specific topics or actions include:

- a policy statement concerning results-based training and development;
- procedures and guidelines for different elements and techniques of the evaluation process;
- meetings and formal sessions to develop staff skills with the ROI process;
- strategies to improve management commitment and support for the ROI process;
- mechanisms to provide technical support for questionnaire design, data analysis, and evaluation strategy; and
- specific techniques to place more attention on results.

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The ROI process can fail or succeed based on these implementation issues.

Final Thoughts

While there is almost universal agreement that more attention is needed on ROI, it is promising to note the tremendous success of ROI. Its use is expanding. Its payoff is huge. The process is not very difficult or impossible. The approaches, strategies, and techniques are not overly complex and can be useful in a variety of settings. The combined and persistent efforts of practitioners and researchers will continue to refine the techniques and create successful applications.

Resources

"Top 100 Training Organizations", *Training Magazine*, March 2004.

Drimmer, Alan, 2002. *Reframing the Measurement Debate: Moving Beyond Program Analysis in the Learning Function*. Washington D.C.: Corporate Executive Board.

Kirkpatrick, D.L., "Techniques for Evaluating Training Programs," *Evaluating Training Programs*. Alexandria, VA: American Society for Training and Development, 1975, pp. 1-17.

Phillips, Jack J., "The ROI Certification Process". www.roiinstitute.net, 2004.

Sibbet, D. "75 Years of Management Ideas and Practice 1922-1997: A Supplement to the Harvard Business Review." *Harvard Business Review*, September-October 1997.

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