

The Kirkpatrick/Phillips Model for Evaluating Human Resource Development and Training

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The ROI Methodology

Because of its appropriateness to the business setting, the evaluation model that emerged from the work of Dr. Donald Kirkpatrick and Dr. Jack Phillips has become the most credible and most widely used training and HRD evaluation methodology in the world. In particular, the Phillips ROI Methodology™ offers a practical way to forecast the potential payoff—return on investment (ROI)—of a proposed training or human resources development initiative *before funds are committed*.

The MCPCC ROI Forecasting Tool, based on the Phillips approach, is an easy-to-use decision support tool that allows organizations to quickly develop and examine the business case for investing in workforce development. While the tool itself is a self-contained and self-explanatory ROI calculator, the following is a brief overview of the ROI Methodology™ underlying the forecasting tool.

ROI and cost-benefit analysis are familiar decision-making tools used in business management worldwide. They are used most commonly to analyze planned investment decisions for the acquisition of capital equipment and technology. At its simplest, ROI is the ratio of the net benefits of an investment compared to its total costs.

The formula for ROI is:

$$\text{ROI} = \frac{\text{Total Program Benefits} - \text{Total Program Costs}}{\text{Total Program Costs}} \times 100\%$$

or,

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

In order to conduct a training ROI analysis, the Phillips model recommends an 18-step process that systematically progresses through the key evaluation/development steps from needs assessment through program objectives development, evaluation strategy,

evaluation instrument design, data collection, analysis, return on investment calculating, and reporting.

The Phillips Model

The Phillips model measures training outcomes at five levels:

Level	Brief Description
1. Reaction, Satisfaction, & Planned Action	Measures participant reaction to and satisfaction with the training program and participant's plans for action
2. Learning	Measures skills and knowledge gains
3. Application and Implementation	Measures changes in on-the-job application, behaviour change, and implementation.
4. Business Impact	Measures business impact
5. Return on Investment (ROI)	Compares the monetary value of the business outcomes with the costs of the training program

Chain of Impact

Ideally, when a training program is implemented, according to Phillips, it should create a chain of impact at several levels beginning at Satisfaction/Planned Action and ending in ROI. When business results and ROI are to be measured (Levels 4 & 5), it is also important to evaluate the other levels. A chain of impact should occur through the levels as skills and knowledge learned (Level 2) and are applied on the job (Level 3) to produce business impact (Level 4). If measurements are not taken at each level, it is difficult in the end to conclude that the business results achieved were actually caused by the program. On the other hand, if a negative ROI results from the training investment, the evaluator should be able to identify which link(s) in the chain was (were) broken (e.g., the participants did not learn (Level 2), or they were unable to successfully apply the new learning on the job (Level 3)). From the perspective of the organization, the *value* of the information gathered increases with movement along the chain of impact from Level 1 (Reaction, Satisfaction, and Planned Action) to Level 5 (ROI).

The following provides a summary of the five levels:

Level 1 - Reaction, Satisfaction, and Planned Action: Level 1 measures participants' satisfaction with a program as well as their plans to use what they have learned. Although most organizations evaluate at Level 1 exclusively, it should be noted that this level of evaluation does not guarantee that participants have learned new skills or knowledge or will use them on the job.

Level 2 – Learning: Using tests, skill practices, role playing, simulations, group evaluations, and other assessment tools, level 2 evaluations assess how much participants have

learned. Again, although it is useful to know that participants have absorbed the new skills and knowledge, a positive outcome here does not mean that participants will use the new learning when they are back on the job.

Level 3 - Behaviour, Application and Implementation: Level 3 evaluation assesses whether (and how much) participants applied the new knowledge and skills on the job. The extent to which the new learning is applied in the workplace (or changes behaviours) determines Level 3 success. Here too, it should be remembered, a favourable Level 3 evaluation does not guarantee that business outcomes will be positive.

Level 4 - Business Impact: Level 4 measures the extent to which business measures have improved after training. Typical Level 4 measures are output, quality, costs, and time. It is important to go beyond Level 4 business results, however, because even if the training program results in substantial business improvement, there is still a concern that the program's costs may outweigh its business benefits.

Level 5 - Return on Investment (ROI): ROI is the ultimate level of evaluation. It compares the monetary benefits from the program with the program costs. Although the ROI can be expressed in several ways, it is usually presented as a percentage or cost/benefit ratio. (Phillips 2005)

The Phillips' model evolves from, and can be distinguished from, the earlier Kirkpatrick model by the adoption of return on investment to yield additional, critical insight. ROI allows decision makers to compare the ultimate value of a training investment with other potential investment opportunities.

Isolation techniques: Another key technique introduced by Phillips is 'Isolation.' In the past, a major barrier to evaluating the business impact of training was the perception that it is all but impossible to separate training's impact from the many other potential factors driving bottom line results. An important feature of the Dr. Phillips' evaluation model, therefore, is the recognition that credibility depends on the extent to which the evaluation accounts for these other factors. The Phillips model uses ten techniques to isolate the business impact of training from other potential sources of business improvement (interest rate changes, competitive environment, marketing programs, employee bonus schemes, seasonal effects that temporarily contribute to business improvements, etc.).

Intangibles: A further refinement by Phillips to the Kirkpatrick model is the addition of intangibles. According to the methodology, it is important to recognize that some outcomes cannot be easily measured and converted to monetary values. Attempting to put a dollar value on outcomes such as customer satisfaction, a less stressful work environment, and employee satisfaction can be extremely difficult, and the results may be of questionable value. Trying too hard to attach a business value may call into question the credibility of the entire evaluation effort. As a result, the Phillips

methodology recommends that evaluators do not try to convert those “soft” business measures, and instead report them as intangible benefits along with the “hard” business improvement outcomes such as increase in sales, reduced defects, time savings, etc.

The ROI Evaluation Process

It worthwhile noting that evaluation may serve a number of key quality control functions in addition to establishing training’s business value. Some of the other objectives of evaluation are to:

- improve the quality of learning programs
- determine if a program meet its objectives
- identify potential strengths and weaknesses in the learning program
- develop a cost/benefit analysis of training and an Human Resources Development (HRD) investments
- support marketing of training or HRD programs
- determine a program’s appropriateness for the target audience
- assist in decision making about program investments and establish funding priorities

Phillips ROI Model

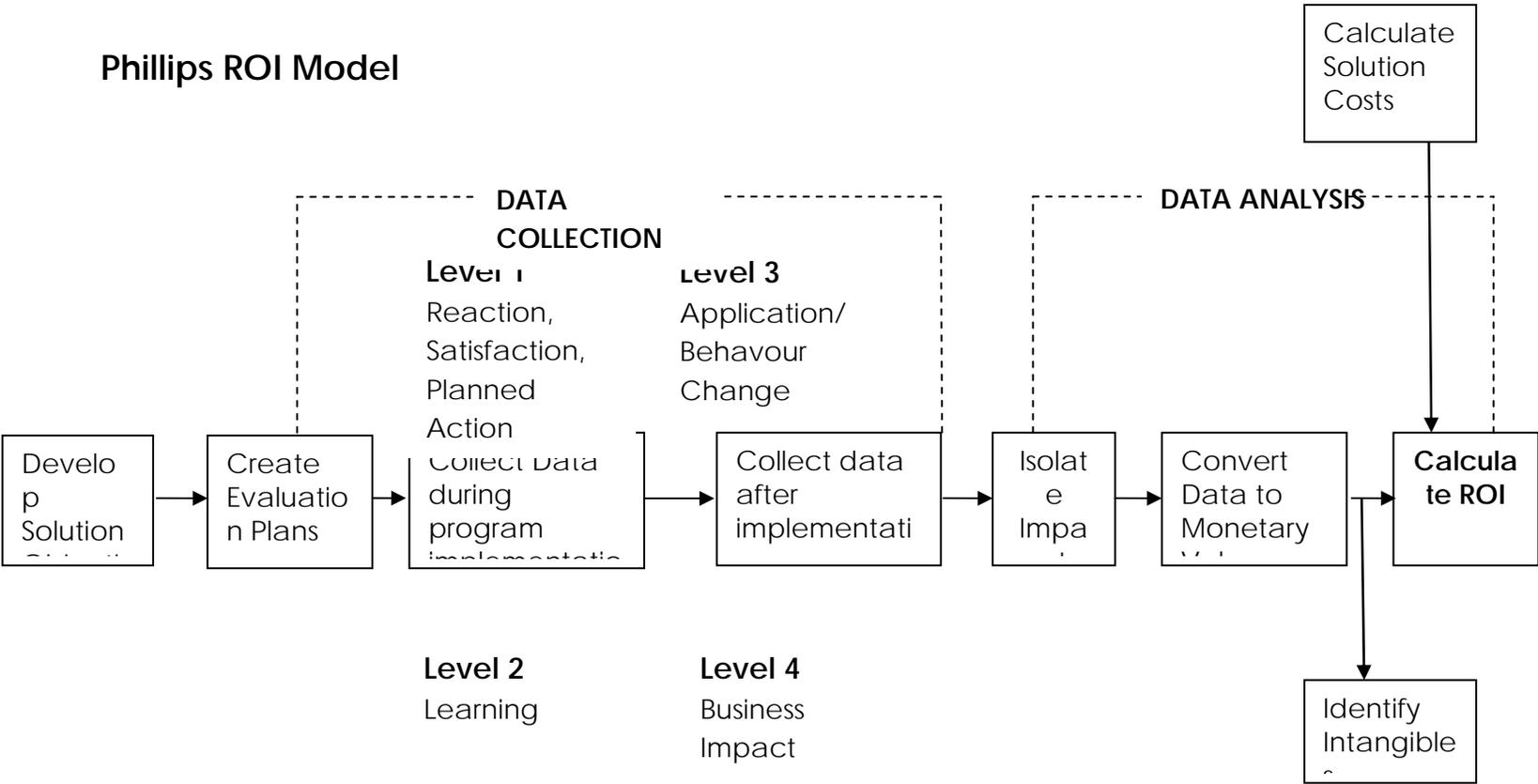


Figure 1: ROI Model
(Phillips, 2003)

(Phillips,

Key Stages: Two of the most critical stages in the Phillips ROI model are *data collection* and *data analysis* (see Figure 1: ROI Model).

Data Collection

A central challenge of the ROI process is data collection—selecting the most appropriate method(s) and the time table for gathering outcomes data at each evaluation level. Depending on the nature of the training program, hard data (representing output, quality, cost, and time) or soft data (customer satisfaction and job satisfaction) may be collected in the course of the evaluation. The following are some of the key data collection methods employed in the Phillips/Kirkpatrick approaches.

- **Follow-up surveys and questionnaires** to measure stakeholder satisfaction and reaction
- **On-the-job observation** to gauge application and use
- **Tests and assessments** to assess learning
- **Interviews** to record participant reaction and program implementation
- **Focus groups** to assess job application of the program
- **Action plans** to encourage application and record participants' progress and impact realized
- **Business performance monitoring** of performance records or operational data to identify improvement

Data Analysis

One of the most critical steps in a training evaluation is *isolation*. Many other factors (e.g., marketing programs, employee bonus programs, etc.) can impact business outcomes after a new program is implemented. From the standpoint of credibility, therefore, it is important to use one or more isolation strategies to separate the business impact of the training program from the impact of other factors. The following are some of the most often used isolation techniques:

- **Control Groups:** The outcomes of pilot group of participants in a program are compared with the outcomes of a **control group** of participants who are not participating in the program. This is the most effective way to isolate training's impact.
- **Trend lines:** Trend lines are commonly used to project expected business impact data into the future. Such projections are compared with the actual data after a major corporate program or initiative has been implemented to determine if the training has yielded improvement.
- **Participants/stakeholders estimates:** Participants are asked to estimate the amount of improvement directly related to a training or HR program. Because participants have received the training and are personally involved in applying the new skills and

knowledge to the workplace, they are often in the best position to assess training's relative impact.

Converting Data to Monetary Values

In order to calculate the ROI, the data collected in a Level 4 evaluation is converted to monetary values and compared to program costs. To do this, a value must be placed on each unit of improvement (output measure) impacted by the training program. Increases in output measures (increased sales, units produced, etc.) are converted to monetary values based on their unit contribution to profit. Often standard values are available for such measures in most organizations. There are several alternative ways to arrive at monetary value such as converting the value of quality improvements or using participants' wages in those situations where the training has resulted in saving employee time.

Tabulating Program Costs

In order to calculate the Benefit/Cost and the ROI, all of the costs involved in the program must be tabulated. Among the typical cost components of training programs that should be included are the needs assessment, cost to design and develop the program, the cost of all program materials provided to each participant, travel and accommodation, and the fully loaded salaries (i.e., salaries plus benefits) of participants and facilitators.

Calculating the Return on Investment

The ROI is calculated using the program benefits and costs. The key metrics are Benefit/Cost ratio (BCR) and ROI. The benefits/cost ratio is the total program benefits divided by the total costs. The BCR formula is

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

The return on investment is the *net* benefits divided by total program costs, as described earlier.

$$\text{ROI} = \frac{\text{Total Program Benefits} - \text{Total Program Costs}}{\text{Total Program Costs}} \times 100\%$$

Example:

A sales training program delivered to 34 retail sales associates results in an increase in sales contributing an increase in profits to the organization of \$120,000 per year. The total cost of the program was \$90,000.

The benefit cost ratio is

$$\begin{aligned} \text{BCR} &= \frac{\$120,000}{\$90,000} \\ &= \mathbf{1.33:1} \end{aligned}$$

In other words, for every \$1.00 spent on the training program, \$1.33 is returned.

The ROI of the program is:

$$\begin{aligned} \text{ROI} &= \frac{\$120,000 - \$90,000}{\$90,000} \times 100\% \\ &= \frac{\$30,000}{\$90,000} \times 100\% \\ &= \mathbf{33\%} \end{aligned}$$

This means that every dollar spent on the training program is returned and an additional \$0.33 is returned as profit.

Intangible Benefits

In addition to monetary benefits, most training programs will have intangible, non-monetary benefits. Intangibles are those measures that cannot easily be converted to monetary values. According to Phillips, "In some programs, such as interpersonal skills training, team development, leadership, communications training, and management development, the intangible (non monetary) benefits can be more important than tangible (monetary) measures. Consequently, these measures should be monitored and reported as part of the overall evaluation. In practice, every project or program, regardless of its nature, scope, and content will have intangible measures associated with it. The challenge is to efficiently identify and report them." (Phillips 2003)

Typical intangible variables include items such as

- Stress reduction
- Employee engagement
- Grievance reduction
- Improved customer satisfaction
- Complaint reduction
- Conflict reduction/avoidance

Typical ROI Results

Evaluations can be conducted on a wide variety of training programs or any change initiative implemented in organizations. It is not uncommon for training programs to show high returns on investment. In fact, investment in training programs often results in higher returns to the organization than many other investments such as capital equipment or technology.

The following are some typical results selected from real-world evaluation studies. Note the wide variety of program types evaluated and the broad range of business measures, including employee turnover, reduced waste, sales, and time saving. Also, it is not uncommon for a single program to result in the simultaneous improvement of several measures. (Note: Not all programs will result in positive ROI. Perhaps the key factor in gaining positive ROI is the extent to which the training or HRD program is aligned with the key business goals of the organization.)

Study/Setting	Target Group	Program Description	Business Measures	ROI
Cracker Box	Managers, Manager trainees	Performance management training	Reduced turnover, absenteeism, & waste	298%
Healthcare	Managers, Supervisors, Later all employees	Anti-sexual harassment training	Reduced turnover & grievances	1,052%

Hewlett-Packard	Sales management team, Sales reps	Sales training for complex systems	Inside sales	195%
Verizon Communications	Training staff, Customer service	Customer service skills training	Reduced call escalations	(- 85%)
Canadian Valve Company	New employees	Equipment operations training	Reduced time, scrap, & turnover, Improved safety	132%
Retail Merchandise Company	Sales associates	Retail sales skills	Increased sales revenues	118%
U.S. Department of Veterans Affairs	Managers, Supervisors	Leadership competencies	Cost, time savings, Reduced staff requirements (FTEs)	159%
Garrett Engine (Allied Signal)	Maintenance staff, Hourly employees	Team building	Reduced equipment downtime	125%
High Tech	Managers, Supervisors, Project leaders	Meeting skills	Time savings (reduced number & duration of meetings)	506%
Nortel Networks	Future leaders	Executive coaching	Output productivity, sales, employee retention	788%
Metro Transit Authority	Supervisors, Drivers	New hire screening, employee coaching	Reduced schedule delays & absenteeism, employee satisfaction	822%
US Federal Intelligence Agency	High value experts	Internal Masters degree program	Professional employee retention, turnover	153%

Skillnets Ireland

The following summarizes a series of ROI studies conducted by the Republic of Ireland's Skillnets program in 2005. The evaluation series was funded by Skillnets to build awareness of the ROI evaluation process and to "identify a range of enablers and barriers to effective implementation of the evaluation process."

Company	Program Description	ROI
Bord Na Móna	Technical Training	37%
Choice Hotels Ireland	Call Centre Sales	828%
Laboratory Systems	Food Safety Training	(- 81%)
Constructive Solutions	Management Development	285%
Diageo Brewery	Technical Training	121%
Glanbia Meats	Essential Skills	61%
Laepple Ireland	Health & Safety	150%
Lionbridge Tech	Supervisory Skills	32%
Masterchefs	Soft Skills	(- 97%)

References:

Achieving Results from Training, Robert O. Brinkerhoff, Jossey-Bass, San Francisco, CA, 1987

The Bottomline on ROI, Patricia P. Phillips, Jack J. Phillips, (Series Editor), CEP Press Atlanta, GA, 2002

Evaluating Training Programs (2nd Edition), Donald L. Kirkpatrick, Berrett-Koehler Publishers, San Francisco, CA, 1998.

Return on Investment in Training and Performance Improvement Programs, 2nd Edition, Jack J. Phillips, Butterworth-Heinemann, Burlington, MA, 2003.