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The Role of Economic Justification in the Corporate Training Environment

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Abstract

The Role of Economic Justification in the Corporate Training Environment

David Wells

The corporate training function, unlike other corporate functions such as manufacturing, marketing, and research and development is not required to produce economic justifications of its activities. This is a function of the perception of training, from the senior management perspective, as a expense rather than a potential generator of profit. Additionally, training professionals, at all corporate levels, do not seem to want to take the initiative and produce economic justifications of their efforts in the absence of a requirement from senior management. A framework is developed and presented which can aid training professionals in attempting to apply economic justification, using a modified version of cost-benefit analysis to the training function.

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Chapter 1

Introduction

L. M. Spencer begins his book, Calculating Human Resource Costs And Benefits, with a quote from a fortune 100 Financial Vice-President to a HRD (Human Resource Development) director: "I invest in training the way I invest in a machine tool. If you can't show me a ROI (return on investment) equal to this firm's cost of capital, I'm not buying and your budget is going to be cut" (1986, p.1). The corporate training function, unlike other corporate functions such as manufacturing, marketing, and research and development seems to have escaped the pressures of senior management to produce, in quantifiable terms, a rationale for its existence. "Although training and development is undergoing more financial analysis it is accounted for less than any other major corporate investment" (Carnevale and Schulz, 1990, p. s-2). An investment, according to a Carnegie study conducted during the 1980's, totalling 60 Billion dollars annually, a sum that is equivalent to the total amount spent by all four year colleges and universities in the United States (Bloomberg, 1989).

To many training department directors and other HRD professionals, the lack of senior management pressure to produce economic justifications of their efforts must seem like a blessing. There are others, however, who would argue that this attitude toward the training department by senior

management is not a blessing, that, on the contrary, it is a curse.

Most training professionals, at all corporate levels, do not seem to want to take the initiative and pursue the possibilities of economic justification of their efforts in the absence of any demand for it from senior management. There is no doubt that a justification, in economic terms, of any corporate function will be problematic. Although economic justification will be defined in another section of this paper, it can be stated at this point that at the heart of any kind of economic justification is the careful calculation of the total cost of a particular decision. This requires that detailed cost records be kept as the course of action that results from a decision is carried out. This act, in itself, results in additional costs being incurred, in terms of salary and related expenses.

On the other hand, with the demand for economic justification comes a sense of corporate belonging and potential contribution. In successfully meeting the criteria for justification, there is a recognition from senior management that a given function adds to the overall financial benefit of the corporation and is, therefore, allocated resources accordingly. Both this sense of belonging and adequate allocation of resources have traditionally not been associated with the training function in most North American corporations (Carnevale and Schulz,

1990).

Intuitively, training has value (Monteau, 1987; Murdick, 1975; Odiorne 1979). "There does seem to be a cause and effect relationship between the fact that a company which is profitable customarily does management training" (Odiorne, 1979, p. 194) However, the intuitive value of training is not easily translated into monetary terms. Without evidence which supports the monetary value of training, those who do not value training can too easily respond: "The fact that companies are profitable means that they can afford to train" (Odiorne, 1979, p. 194).

The language of business is dollars. The dominant, driving force behind corporate existence is the desire to earn profit. As long as senior management views the training function as an expense, and a user of resources, as opposed to a generator of profit, training will, at best, play a secondary role in the overall corporate structure (Cheek, 1973).

Training is a broad term that encompasses a number of different activities. Training can be formal, in the sense of prepared seminars on selected topics, paper-based or other media based materials (such as computer-based training or instructional video) that can be given to employees or structured, supervised on-the-job training programs. Training can also be informal, such as unstructured, unsupervised on-the-job training or simply the communication

of information that takes place between employees on an ongoing basis. The large scope of the training environment has resulted in different definitions of training being developed.

Hesseling (1966) defines training as "a systematic effort to create learning situations" (p. 23). Hesseling, in choosing the term "systematic" clearly views training as a formal activity. Hawthorne (1987) views training as "instruction offered by business and industrial firms for their own employees. Instruction can be provided by employees of the firm or by outside consultants" (p. 1). Kenney and Donnelly (1972) argue that training is "helping an individual to learn how to carry out satisfactorily the work required of him in his present job" (p. 8), and that this differs from development which is "preparing an individual for a future job" (p. 8).

The determination of which activities are within the boundaries of the training function or a discussion of the differences between education and training (Kenney and Donnelly, 1972; Hawthorne, 1987) are important issues, but are beyond the scope of this thesis. Here, references to the training function, training activities, training efforts and endeavours all refer to formal, planned courses of action that are undertaken by HRD professionals employed by a training department or unit.

> decisions on corporate education investments are made in the wider context of other investment opportunities: to improve performance. But the lack of quantitative return on investment (ROI) information about education places these investments at a disadvantage. The educator must frequently cite hollow reassurances about the value of education to employees and the corporation. As a consequence, educational programs are frequently vulnerable when resource allocations are made throughout the company (Hawthorn, 1987, foreword by T. J. Settle, no page).

> In tough economic times, management education is one of the first areas to be curtailed by many companies. This practice fosters the belief that management education is not essential and emphasizes the cost rather than the investment perspective (Kilmurray and Lambert, 1987, p. 179).

> Typically, training is not perceived as making a measurable contribution to profitability. As long as no one demands a contribution or even asks about it, a fragile security prevails for the training division. But the possibility of decimation in hard times is there. It is imperative therefore, that the training division perceive its role differently and be proactive in promoting a new conception of its potential contribution (F. J. McDonald, 1987, p.33)

Each of these quotes points to one of the most dramatic problems associated with the lack of economic justification for the training function; that without the necessary "bottom line" support, the training functions' access to corporate resources will not be on the same basis as other corporate functions. Resources will not be allocated to the training on a competitive basis, using ROI criteria, but on

the basis of the state of the economic climate. "Personnel is one of the last areas to be augmented in an economic upswing and one of the first to be trimmed in hard times" (Cheek, 1973, p. 97). This idea of the feast and famine of the training function is well established in the professional training literature (Bowsher, 1990; Burke, 1969; Carnevale and Schulz, 1990; Douthat, 1970; Hansson, Smith and Mancinelli, 1990; Odiorne 1979; Spencer, 1986). One could argue that economic climate would have an impact on most corporate functions, not just training, and the point would be well taken. However what varies is that the training function is treated differently. Because training is viewed predominantly as an expense (Carnevale and Schulz, 1990) by senior management, rather than a generator of profit, it is cut first. Once this is done, senior management then decides what further cuts have to be made, using some form of economic criteria.

Training activities use corporate resources, and resources have cost implications. Without the effort, or the opportunity, to show the potential dollar benefits associated with the cost of training, training is seen only as an expense, and training staff, as Spencer (1986) indicates, are seen as overhead (people who cost money).

Senior management constantly evaluate training efforts and assign monetary values to them. When realistic information regarding the value of training is not provided

to them "these decision makers may draw arbitrary, inaccurate conclusions" (Carnevale and Schulz, 1990, p. s-2).

Another problem with the lack of economic justification lies in the perception of the training function by the recipients of training programs. If, within an organization, it is common knowledge that the training department is not highly regarded by senior management, then the ability of the training department to have an impact on performance is prejudiced. The credibility of the training function in the eyes of both management and staff is critical to its success (Hesseling, 1966; Keller, 1987; May et al, 1987).

Johnston (1975) did a subjective review of the Business Decision Game, which was very popular in the 1960's. Essentially a simulation designed to improve managerial performance, the Business Decision Game was a fairly expensive training option. Johnston found it to be very impressive despite its cost. However, he stated "it is very difficult to compare the cost of the Business Decision Game with savings generated through improved performance since accurate measures of the latter are not readily available" (p. 204). Ultimately, he concluded that the Business Decision Game would lose popularity because of its cost and the lack of objectively measured benefits. Time has proven him correct.

In addressing the problems facing the training function, Carnevale and Schulz state: "Accounting for the positive economic influence of training and development is the most critical issue in the training profession today" (1990, p. s-2).

Not everyone is convinced of the need for economic justification of the training function. Although not prominent in the literature, opposition to economic justification does exist. Andrew, quoted in Kirkpatrick (1975) states: "To prove the quantitative contribution of formal education may remain impossible and finally be considered irrelevant" (p. 186). Similarly Harper (1975) questions whether or not the results of training can be interpreted on the balance sheet of an organization: "You should determine the effectiveness of your supervisor training program in many ways, perhaps the most valuable will not result in data that can be subtracted, multiplied, added and subtracted" (p. 216).

Bushnell (1990) describes the IPO (Input, Process, Output) approach to training evaluation. Essentially a form of economic justification, it attempts to balance the costs and results of training. Used by IBM, Motorola, Xerox and Federal Express it has had measurable success. Carnevale and Schulz (1990) list Arthur Andersen, Johnson & Johnson, Motorola, and Polaroid as companies that are currently evaluating training from an economic perspective. All of

these companies are recognized for their outstanding training departments.

Statement Of The Problem

The lack of demand for an economic justification of the training function by senior management, coupled with the lack of initiative on the part of training professionals to produce economic justifications, has been a major factor in the training function being viewed and treated differently than other major corporate functions by senior management. This has resulted in the emergence of training as a secondary, rather than primary, corporate function despite the intuitive understanding on the part of senior management that training has value.

Objectives and Purposes

The first objective is to review the literature in an attempt to determine the impact on the training function of a lack of economic justification.

The second objective is to define training evaluation and economic justification and to show how the two are related.

The third objective is to review the literature to determine the reasons why economic justification has been used so infrequently in the training domain.

The fourth objective is to analyze each of the reasons why economic justification is not being used in an attempt

to show that they are in fact not terminal; that is, that none of the reasons identified in the literature are strong enough to preclude the use of economic justification in the training field.

Finally, assuming that no single reason or reasons are determined to prohibit the use of economic justification, a framework is to be developed to help orientate training specialists and supervisors in the application of economic justification techniques, specifically cost-benefit analysis.

The overall purpose of the thesis is to demonstrate the necessity for HRD professionals to convince senior management of the potential economic value of training and to develop a framework that will help them to do so.

Methodology

Based upon the problem statement above, a review of the literature is to be conducted in an effort to determine why HRD professionals are making little use of economic justification techniques to show, in dollar terms, the value of their efforts. Each reason that is identified is then be evaluated, again using the literature as a reference, to determine whether it represents a true barrier to the use of economic justification techniques within the training environment or whether it is an obstacle that can be overcome.

Assuming that no true barriers are identified (my

hypothesis is that no true barriers exist), a framework is to be developed that will allow HRD professionals to begin using economic justification techniques.

The literature consulted includes the professional training literature, economic literature, and protessional accounting literature.

Chapter 2

Economic Justification Defined

Economic justification is a determination as to whether or not the costs involved in a given or proposed course of action is, or was, warranted, using economic criteria as a basis for the determination. "Learning Theory and Psychology can tell us how to teach, Economic Analysis can tell us whether or not we should train at all (Odiorne, 1979, p. 34). Economic justification is a broad term that encompasses a variety of techniques, including cost-feasibility analysis, cost effectiveness analysis, cost-benefit analysis, cost-utility analysis (Popham, 1988) break-even analysis, capital budgeting theory, and investment analysis (Garrison, 1988). The purpose of this thesis is not to discuss the positive and negative attributes of each of these techniques but to focus on one that will be of the most use to HRD professionals in creating economic justifications of training efforts, and in conveying the results of the justifications to senior management.

"Because of its focus on utility, benefit-cost analysis is a natural course of evaluation methodology for decision makers who are consistently confronted with a 'bottom line' approach to decision making" (Hawthorne, 1987, p. 35). Benefit-cost analysis and cost-benefit analysis refer to the same technique and can be used interchangeably. Campen (1986) concluded that cost-benefit analysis is used

predominantly in American texts whereas benefit cost analysis is used in British texts.

Spencer (1986) lists four reasons for the application of cost-benefit analysis to the training environment. First, the cost-benefit analysis process, which requires the identification of training cost elements, will improve training efforts by cutting out unnecessary training expenditures. Second, the very survival of training departments depends upon the economic justification of training efforts. Third, the credibility of training departments, in the view of senior management, will be improved. Fourth, the development of the skills required to perform cost-benefit analyses represents professional development for HRD staff.

Cost-Benefit Analysis Defined

Prest and Turvey (1965) define Cost Benefit-Analysis as

> A practical way of assessing the desirability of projects, where it is important to take a long view (in the sense of looking at repercussions in the further as well as nearer, future) and a wide view (in the sense of allowing for side effects of many kinds on many persons, industries, religions, etc.) i.e., it implies the enumeration and evaluation of all the relevant costs and benefits (p. 683).

A similar definition has been offered by Mishan (1982)

> The general question that a cost-benefit analysis sets out to answer is whether a number of investment projects, A, B, C, etc, should be undertaken and, if investible funds

> are limited, which one, two, or more, among these specific projects that would otherwise qualify for admission should be selected. In cost benefit-analysis we are concerned with the economy as a whole, with the welfare of a defined society, and not any smaller part of it (p. xix).

Both of these definitions view cost benefit-analysis from a societal perspective. Without discussing the relative merits associated with such an approach it will suffice to say that a societal perspective is beyond the scope and intent of this paper.

A more practical and useful definition (from the HRD point of view) has been supplied by Wood and Campbell (1970):

> Cost benefit-analysis is a method of investment appraisal. It can be applied to any expenditure which is capital forming and consequently, it is expected to yield a future return. An investment by definition, incurs costs and yields benefits at more than one point in time. Costs incurred and benefits accruing at different times must be reduced to a common point in time, usually the present, before they can be compared. An interest rate is used to discount benefits and costs to present values (preface, v)

Two major differences exist between Wood's and Campbell's definition and Mishan's. First, is whether or not cost benefit-analysis can be applied to a single decision, or if in fact, as Mishan's points out, that it is a technique used to determine the best decision(s) from among a variety of alternative decisions from a cost-benefit perspective. Davis and Morrall (1974) argue that the absence of a second (or additional) alternative(s) does not

decrease the level of research complexity as much as it does the volume of repetitive actions. Conversely, Drummond and Stoddart (1985) view the absence of choice between alternative courses of action as the most common flaw in the application of cost-benefit analysis.

In more simple terms, Sugden and Williams (1978) in The Principles of Practical Cost-Benefit Analysis define cost-benefit analysis as "a way of organizing thought, a way of reasoning about decision-making" (preface). Using this broad view, the term cost-benefit analysis will be used in this thesis to refer to either case, where one decision is evaluated, or several decisions are evaluated simultaneously.

Second, is the use of the term "capital forming" by Wood and Campbell. Capital forming refers to expenditures that will accrue benefits beyond a single accounting period, which usually is one year (Anthony et al, 1985; Daudelis, 1990; Garrison ,1988). This creates a problem because accounting practice typically classifies most training expenditures as expenses which, by definition, are non-capital forming. The issue will be addressed at a later point in this paper. For now, it will be assumed that accounting practices will not prevent the application of cost-benefit analysis to training efforts.

The three definitions presented earlier qualify cost benefit-analysis as a prospective technique that is used to

determine the potential economic gain (or loss) of a potential course of action. Other authors argue that cost-benefit analysis can be applied on a prospective or on a retrospective basis (Bloomberg, 1979; Hawthorne, 1987; Sugden and Williams, 1978; Trueblood, 1992). Applications of cost benefit-analyses in the training field as Reddy (1979) states, "have concentrated on ex-post (retrospective) analyses (p. 53). Trueblood (1992) argues, "regardless of the application, the role of cost benefit-analysis remains the same, that is, it explicitly compares the present or anticipated costs of actions with the present or anticipated benefits as long as costs and benefits are expressed in the same units" (p. 59). For the purposes of this thesis, cost-benefit analysis can be applied in either prospective or retrospective fashion.

Bloomberg (1989) identifies three assumptions underlying the application of cost-benefit analysis techniques to training efforts. First, corporate education must have worth. Secondly, investments in human capital must have the potential to prove economically superior to alternative investments in other capital resources. Thirdly, benefits and cost occur over time and as such must be discounted to present values (using some acceptable method) in order that they may be compared.

Cost-effectiveness analysis and cost-benefit analysis are often used interchangeably even though substantial

differences exist between the two terms (Trueblood, 1992). As previously indicated both cost-effectiveness analysis and cost-benefit analysis are techniques that fall under economic justification.

Cost-effectiveness analysis does not attempt to measure the benefits associated with a given course of action. Instead it assesses, in single service units outcomes, the total costs of a given course of action. (Griffiths, 1988; Mills and Drummond, 1985; Trueblood, 1992). Sugden and Williams (1978) define cost-effectiveness analysis as the following:

> Cost-effectiveness analysis tries to show how a given level of benefit can be achieved at the minimum cost, or to show how the maximum benefit can be achieved at some given level of cost (p. 190)

Examples of cost-effectiveness measures of training efforts include cost per hour, cost per student, cost per course, etc.

Cost Benefit-Analysis Framework

Regardless of the discussion surrounding the use of cost-benefit analysis as a prospective or retrospective technique, or whether is must be used as a decision aid to determine the optimal (using economic criteria) course of action from among a number of alternatives or to determine the economic merits of a single course of action, the main objective of cost-benefit analysis is the calculation (estimation) of the costs and benefits associated with a

decision.

Costs

Anthony et al (1985) state "cost is one of the most slippery words used in accounting" (p. 31). In light of this a full discussion of the term "cost" will prove useful.

Bloomberg (1990) defines a cost as "that which is given up to obtain something else (p. 89). Similarly, Garrison (1988) in Managerial Accounting: Concepts for Planning, Control, Decision Making, defines cost, from a more traditional accounting perspective, as "the sacrifice made in order to obtain some good or service" (p. 29). Even more precise is the definition by Anthony et al (1985): "Cost is a measurement, in monetary terms, of the amount of resources used for some purpose" (p. 31). It is important not to equate cost with the term expense. An expense is "an outflow of assets or the resources of an entity used up, or obligations incurred during a time period, in the course of earning revenue" (Dauderis, 1990, p. 9). The key phrase here is "in a time period". An expense, by accounting definition, is not expected to yield a return beyond the normal accounting cycle of a business entity, which in most cases is one year (Dauderis, 1990). A capital expenditure, on the other hand, represents a cost that is expected to yield benefits beyond the current accounting cycle. Capital expenditures are not expensed at the time they are incurred but are translated into fixed assets (Garrison, 1988).

Ultimately, capital costs are expensed over a period of time through depreciation. Depreciation is the "process of allocating the cost of a fixed asset to each accounting period that will benefit from its use" (Dauderis, 1990, p. 364). Clearly, both expenses and capital expenditures are costs, but they are not accounted for in the same way.

Costs can also differ with respect to their behaviour pattern. "Cost behaviour means how a cost will react or respond to changes in the level of business activity" (Garrison, 1988, p. 42). Variable costs are costs that vary in direct proportion to changes in activity level (Garrison, 1990). For example, one of the activity levels associated with the training function is the number of trainees participating in training programs. As the number of trainees is increased, any costs that increase and that are a result of the rise in the number of trainees would be variable costs. Instructional materials costs, food and lodging (if applicable), and trainees' salaries costs are among those that would be considered variable as they would increase as the number of participants increases.

Fixed costs "are costs that remain constant in total, regardless of changes in the level of activity" (Garrison, 1990, p. 42). Using our previous example, the costs associated with instructional materials development would be considered fixed, as that cost would remain constant irrespective of the number of trainees who ultimately use

the instructional materials.

A Semi-variable cost "is an element of cost whose total changes in the same direction as, but less than proportionately with, changes in volume" (Anthony et al, 1985, p. 35). This, in effect, means that a semi-variable cost is one that contains both variable and fixed properties. Break-even Analysis, another technique of economic justification, has been criticized heavily because of its rigid classification of all costs into variable and fixed categories without recognizing the existence of semi-variable costs (Harris, 1978).

Another classification of costs is the extent to which individual costs can be traced to a particular organizational segment (Garrison, 1988). "A direct cost is an item of cost that is specifically traced to or directly caused by a cost objective" (Anthony et al, 1985, p. 102). For example, a decision is taken (as a result of a thorough front-end analysis) to develop a training course aimed at reducing accidents in the workplace. The instructional design labour cost associated with the course would be an example of a direct cost since it can be directly attributed to the decision to produce the course. "An indirect cost is an item of cost that is associated with or caused by two or more cost objectives jointly but is not directly traced to each objective" (Anthony et al, 1985, p. 102). Indirect costs are often referred to as overhead (Anthony et al,

1985; Garrison, 1988). The secretarial and administrative salaries of a training department would be an example of indirect costs. They service all of the training programs offered by the department but cannot be directly linked to any one in particular.

Full cost is another important cost concept. According to Anthony et al (1985) "The full cost of an object is the sum of (1) its direct costs plus (2) a fair share of its indirect costs"(p. 18). Direct costs are usually easier to identify than indirect costs. (Anthony et al, 1985; Carnevale and Schulz, 1990; Garrison, 1988). Although indirect costs are often difficult to determine they can represent a substantial portion of full cost, and need to be addressed.

Opportunity cost is also an important accounting cost concept and is the single most important cost concept in economics (Mishan, 1982). Garrison (1988) defines opportunity cost as "the potential benefit that is lost or sacrificed when the selection of one course of action makes it necessary to give up a competing course of action" (p. 46). Similarly, Popham (1988) describes opportunity cost as the benefit foregone when alternative courses of action are not implemented.

Finally, sunk cost is also of interest. "A sunk cost is a cost that has already been incurred and cannot be changed by any decision made now or in the future" (Garrison, 1988,

p. 47). Since no current or future decision can affect a sunk cost, no sunk cost element can be part of the decision making process (Anthony,et al, 1985; Garrison, 1988). For example, assume that a decision was made to purchase an of-the-shelf training program from a third party vendor by a training manager in response to a defined training need. For one reason or another, after the purchase was made, it was determined that the package was unusable and that no possibility for a refund existed. This represents a sunk cost. No current, or future, decision affects this expenditure. Therefore, the cost of the package should not be part of any current or future decision.

Benefits

Bloomberg (1989) states, "a benefit refers to the outcomes of a project, outcomes which can be measured in monetary terms". Benefits can accrue to a course of action either in the form of increased revenue or decreased expenses (Spencer, 1986).

The benefits associated with training efforts are usually in the form of decreased expenses. Further, the decrease in costs associated with savings in time are the most prominent (Spencer, 1986). Examples of decreased costs include reduced expenditures for labour and materials, lower percentages of sub-standard production, and reduced equipment down-time.

Any defined problem has the potential to show a benefit

(Spencer, 1986). Many training (or instructional design) models include, as an initial step, a problem identification stage (Delaney, 1987; Gagne, Briggs and Wager, 1974; Rossett, 1987). The cost associated with an identified problem is, in effect, the potential benefit that results from any solution that will completely alleviate the problem. "Cost-benefit analysis consists of identifying all the benefits that accrue as a result of the program of interest and converting them to present day dollars" (Trueblood, 1992, p. 71). Setting aside the concept of the time value of money for the moment, the application of cost-benefit analysis requires that cost and benefits be expressed in the same units. This creates a problem because many of the benefits associated with training outcomes are intangible in nature (Carnevale and Schulz, 1990; Cheek, 1973; Kirkpatrick, 1975; Odiorne, 1975; Roberts, 1972). Carnevale and Schulz (1990) see three basic categories of benefits associated with training: increased revenues; decreased expenses; intangibles. With respect to intangibles, Hawthorne (1987) states, "one of the most challenging aspects of benefit-cost analysis is quantifying benefits which are not routinely assigned a market value. The concept of intangibles will be addressed more thoroughly later on in this thesis.

The existence of intangibles raises the question of why cost-benefit analysis, as opposed to cost effectiveness

analysis is being selected as the preferred technique of economic justification of training efforts. Sugden and Williams (1978) see cost effectiveness analysis as a logical alternative to cost-benefit analysis when nonmonetary benefits are encountered.

The purpose of the thesis, in part, is to demonstrate that training has positive economic value. For the training function to bolster its credibility and standing with senior management, training must present itself as a contributor to corporate profit rather than as an expense. Cost effectiveness analysis, despite its merits as a technique of economic justification, is strictly cost-based and therefore reinforces the managerial view of the training function as a user of resources rather than a potential contributor to profit. As such, it is not suited to the purposes of this thesis.

Time

Whenever cost benefit-analysis is applied to a situation where either the costs or benefits associated with a particular decision will occur (or have occurred, in the case of a retrospective application) over a period exceeding one year, the time value of money must be addressed (Blum, 1974: Stromsdorfer and Blalock, 1986; Trueblood, 1992; Wood and Campbell, 1970; Yates, 1986). Cash is an accounting asset which, in itself, has the potential to earn revenue (Dauderis, 1990). The value of a dollar earned today is not

equivalent to the value of a dollar earned one year from today. To compare the two, the dollar earned one year from now must be discounted by an appropriate interest rate in order to determine its present value (Garrison, 1988). The Net Present Value Method (Garrison, 1988; Harris, 1978; Sugden and Williams, 1978), is a technique that has been developed for cost-benefit applications that adjusts multi-year costs and benefits for the time value of money. The mathematics involved in NPV calculations are complex. Further details regarding NPV methodology can be found in any introductory finance text.

Limitations of Cost-Benefit Analysis

Cohen (1985) points out that systematic cost-benefit analysis studies on corporate training are scarce. This reflects the fact that use of cost-benefit analysis in the evaluation of training efforts will not be problem-free. Spencer (1986) indicates that there often exists the belief that cost-benefit figures are phoney. He acknowledges that these fears are well grounded when cost benefit-analysis is not applied properly.

Cost-benefit analysis, when applied in a prospective manner, requires the estimation of the costs and benefits, over time, associated with a training program (Trueblood, 1992). Therefore, the accuracy of the cost-benefit analysis is directly linked to the accuracy of the estimates of the costs and benefits. Hawthorne (1987) describes this

estimation process as being the most problematic activity in the cost-benefit analysis framework.

Cost-benefit analysis requires that a discount rate be used to discount the stream of costs and benefits over time to present values. Forecasted interest rates, a company's cost of capital, or an internal rate of return are all possible choices for this discount rate (Garrison, 1988). It is imperative that the selection (by HRD staff) made be congruent with the discount rate used in the rest of the corporate environment if training program efforts are to be fairly compared with other corporate investment opportunities.

Traditional cost-benefit analysis definitions require that benefits be stated in monetary terms. The results of training efforts are often seemingly intangible in nature and cannot be easily translated into dollar values. The problems associated with accounting for the intangible results of training will be addressed at a later point.

There exist discrepancies between the accounting literature and the professional training literature. Caffarella (1988) in Program Development and Evaluation Resource Book For Trainers, refers to direct costs as "out of pocket expenses" that would include external instructors' salaries, travel and instructional materials costs. This clearly differs from the definition of direct cost above in that, according to Anthony et al (1985), direct costs do not

have to represent cash outlays, only that they must be directly related to a particular objective, or in this case a particular training program. Spencer (1986) and Carnevale and Schulz (1990) on the other hand define direct and indirect costs in the same fashion as Anthony et al (1985). If training program results are to be compared with other corporate investments using cost-benefit criteria, discrepancies in the definition of cost could lead to unfortunate results.

Chapter 3

The Nature Of Training Evaluation

"Systematic educational evaluation consists of a formal appraisal of the quality of educational phenomena" (Popham, 1988, p.7). Substituting "training for" "educational" in this definition provides us with a useful starting point. The words "systematic" and "formal" are purposively used by Popham to clearly distinguish his definition of evaluation from everyday informal evaluations. Hesseling (1966) states that:

> Evaluation is a natural process: every trainer asks himself whether the training has been effective: every person involved in the training process whether as policy maker, participant, supervisor or subordinate in one way or another assess the value of the process (preface)

For the purposes of this paper evaluation will refer to the systematic, formal kind defined by Popham.

The heart of the definition, according to Popham, is the phrase: "appraisal of the quality" which denotes that a determination of the worth of educational (training) efforts be made. Additionally, "educational phenomena" recognizes that numerous aspects of the education (training) process can be evaluated. Examples, identified by Popham, include: outcomes of the educational endeavour, goals to which educational efforts are addressed and the instructional products themselves.

Evaluation can classified as formative or summative. Formative evaluation is the process of revising and

improving instruction (Gagne, Briggs and Wager, 1988; Popham, 1988). Dick and Carey (1985) have developed a three phase approach to formative evaluation. Phase one is a one to-one evaluation, conducted by the evaluator with individual learners (representative of the audience for which instruction was designed), the purpose of which is "to identify and remove the most obvious errors in the instruction, and to obtain initial reactions to the content from learners" (p. 199). Phase two is a small group evaluation that serves to determine the effectiveness of changes made to the instruction as a result of the one-to-one evaluation, and to identify any remaining problems. Phase three is a field trial, where the instruction is delivered in a setting that closely resembles the ultimate delivery of the instruction. The effect of changes made as a result of the small group evaluation are monitored and a determination is made as to whether the instruction can be implemented in the environment for which it was intended. Formative evaluation is an ongoing activity constantly providing feedback into the instructional design process for the purpose of modifying the instruction (Dick and Carey, 1985; Gagne et al, 1988; Popham, 1988).

Summative evaluation is conducted after a program has completed the formative evaluation stage (Gagne et al, 1988). The purpose of summative evaluation is to value the worth of a program. Unlike formative evaluation, summative

evaluation does not result in modifications being made to a program (Dick and Carey, 1985; Gagne et al, 1988).

Popham (1988), has identified five classes of education evaluation models (summative). Each are listed below with a brief description.

Goal Attainment Models

A goal attainment approach to evaluation stresses the importance of ascertaining the extent to which the prescribed goals of an instructional program have been reached. Obviously, the quality of the goals, as originally stated, is a major factor for models in this class.

Judgemental Models Emphasizing Inputs

Here, professional judgement is the primary force of the evaluation and "it is the evaluators' judgement that determines how favourable or unfavourable the evaluation turns out to be. (p. 26). The emphasis here is also on inputs to the educational process. These are sometimes referred to as intrinsic criteria or process criteria. In this class of models the best known, and most widely used, is the Accreditation Model. Used predominantly by school associations, it has a great deal of intuitive support. However, current views hold that evaluations models that rely strictly on input analysis have serious limitations.

Judgemental Models Emphasizing Outputs

This class is similar to the above models with the

exception that emphasis is placed on the outputs of the educational process, sometimes referred to as extrinsic or process criteria, as opposed to inputs. Michael Scriven's Payoff Model and Robert Stake's Countenance Model are among the most prominent of this class.

Decision Facilitation Models

In this class of models the role of the evaluator is primarily that of data collector. Typically, the evaluators "are less willing to assess personally the worth of education phenomena" (p. 33). The CIPP is the best known of these models. Cipp is an acronym for the four different evaluation types the model identifies: context, input, process and output. It has its own definition of evaluation: "Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives" (p.34).

Naturalistic Models

Also referred to as "qualitative", naturalistic models differ substantially from the others discussed above in so far as the system being evaluated is considered as important as the evaluation strategy itself. Stake's Responsive Evaluation, and Eisner's Connoisseurship Model are examples of naturalistic approaches to evaluation.

Kirkpatrick (1978) developed a model of evaluation in which he has identified four levels of evaluation

(Summative). Unlike Popham, who addresses evaluation from a broad perspective, Kirkpatrick's model specifically deals with training evaluation. The four levels of Kirkpatrick's model are as follows:

Reaction

This level addresses the question "How do participants feel about the program?" This is essentially a measure of customer (participant) satisfaction. According to Kirkpatrick, this is the most widely used level of evaluation. Odiorne (1979) questions the validity of this type of evaluation and states "almost any well planned and competently executed course will draw a favourable response from those who attended the course" (p. 32).

Learning

This level of evaluation attempts to answer the question "What knowledge and skills were learned as a result of the training?". To the extent that learning objectives were developed for the training program, how effectively were these objectives accomplished? Kirkpatrick's reaction level corresponds closely with Popham's description of Goal Attainment Models.

Behaviour

Here the question to be answered is "To what extent did on-the-job behaviour of participants change as a result of the training program?" This level is more complex than the

learning level because it aims to translate increases in skills and knowledge into behaviour (performance) changes.

Results

"What final results did the program produce?". Results are measured through improved productivity, lower costs, reduced accidents, improved morale, better service, and more profits. It is this level of evaluation that is associated with economic justification of training efforts. The results level corresponds to an HMSO 1970 Glossary of terms (in Kenney and Donnelly, 1972) that defines training evaluation as:

> The assessment of the total value of a training system, training course or program in social as well as financial terms; it attempts to measure the overall cost-benefit of the course or program and not just the achievement of its laid down objectives (p. 78)

Zenger and Hargis (1982) produced a very similar model to Kirkpatrick's that included one addition level of evaluation. They referred to this level as anecdotal, and it fits between Kirkpatrick's Reaction and Learning levels. It consists of collecting anecdotes, testimonials and incidents from the participants in the training process and performing a subjective analysis upon them.

Kenney and Donnelly (1972) developed a four step approach to training where the fourth step was an evaluation of the training program. They identified three stages in this process. The first was internal validation. Similar

to Popham's (1988) Goal Attainment, this stage involved determining whether the training program achieved its intended goals and objectives. The second, external validation, involved looking at the original goals and objectives and determining their appropriateness. The last stage is a cost-benefit analysis of the training program.

Warr, Bird and Rackham (1970) developed a three level approach to training evaluation. The first level is input. At this level, an analysis of the resources used to achieve training objectives is conducted. The second level is reaction, which is essentially the same as Kirkpatrick's reaction level. The third level is outcome which is subdivided into three components: Immediate, Intermediate and Ultimate. Immediate involves determining changes in trainees' skills and knowledge (similar to Kirkpatrick's learning level). Intermediate is the change in behaviour as a result of changes in skill and knowledge (similar to Kirkpatrick's behaviour level). Finally, ultimate involves looking at factors such as increased productivity, greater return on investment and increased profits (similar to Kirkpatrick's results level). The authors point out that ultimate evaluation is the most difficult to measure.

Jones (in Kenney and Donnelly, 1972), discusses training evaluation from the perspective of the levels of measurement applied to training efforts. He identified six levels of measurement:

1) Validation

This involves determining the extent to which the skill and knowledge objectives of the training program have been achieved.

2) Budgeting

From a financial and accounting perspective this is limited to recording and controlling costs.

3) Cost Effectiveness

The total costs of various courses of action aimed at problem solution are compared.

4) Cost Benefit-Analysis

This goes one step beyond cost effectiveness and determines the potential benefits of each course of action. The benefits are compared to the costs to determine whether the training program is economically feasible.

5) Measurement Of Best Mix

This involves examining all training needs simultaneously in an attempt to determine which problems offer the greatest economic benefit in their solution.

6) Investment Appraisal

This involves looking at the opportunity cost of training. This level has implications beyond the training department because the opportunity cost of training essentially is how that expenditure could best be used in

other corporate endeavours to maximize total profit.

Jones' model is clearly quite different than the others discussed thus far. With the exception of the validation level, the remaining five levels all reflect to some degree the idea of economic justification. Jones' concept of cost-benefit analysis is clearly different than that of other authors previously mentioned. Generally speaking, most cost-benefit definitions would contain what Jones defined separately as cost-benefit analysis, measurement of best mix, and investment appraisal

Using Kirkpatrick's model (because it is much more widely used in the training environment) it becomes clear that the different levels of evaluation produce different kinds of information. What variables must be addressed in determining which level of evaluation should be used in evaluating training is an important question. Zenger and Hargis (1982) have identified three issues relating to training evaluation options. The first is rigor. Rigor is defined as the validity, reliability and precision of measurement. The second is relevance which links the purpose of the evaluation to organizational goals. The third is economy. Here the trade-off between the costs and the benefits of the evaluation must be weighed. Zenger and Hargis view Kirkpatrick's levels of evaluation as a continuum, ranging from reaction to results. Reaction, at the low end, would be the least rigorous, the least relevant

and the least expensive level of evaluation to conduct. Results, at the high end, is the most rigorous, the most relevant and the most expensive. In general terms they argue that the behaviour level is the best compromise between rigor, relevance and economy: "measures of behavioral change usually best satisfy the conditions of effective evaluation (p. 12).

Carnevale and Schulz (1990), in a similar fashion, see evaluation designs differing in terms of practicality and rigor. Rigor relates to the quality and quantity of information that is gathered as a result of the evaluation and the extent to which the evaluation design allows participant and organizational change to be traced back to training efforts. Rigorous evaluation designs collect data from all or most participants, collect data more than once, evaluate at the organizational results level and employ quantitative data collection methods. They also point out that rigorous evaluation is expensive and time consuming and should only be used when training's success is critical for safety of strategic business purposes, such as making decisions regarding training program continuation or cutback.

Carnevale and Schulz also describe practical evaluation designs which are less rigorous, collect data from small samples of participants, are conducted at reaction and learning levels and make use of qualitative data collection

techniques. Obviously these types of designs will be less expensive and take less time. They can be used when training success is desirable but not crucial, to identify training program strengths and weaknesses, or when a more rigorous design is impossible or not economically justified.

According to Caffarella (1988), "training program evaluation is the process used to determine the effectiveness of the training activities and the results of those activities" (p. 190). Further, program evaluation has two components: measurement and appraisal. Measurement is the determination by some objective means whether or not the goals and objectives of the training program have been achieved (Popham's Goal Attainment Model). Appraisal is the more subjective judgement of how well those program objectives have been accomplished and whether each objective was a worthwhile endeavour.

Hesseling (1966) defines evaluation as a broader concept than strict validation. He sees evaluation taking into account unintended outcomes. Unintended outcomes are those outcomes which were not originally planned for in the training design. Ingols (1975) conducted a survey of large training evaluation studies which showed that a substantial number had unanticipated or unintended outcomes, which had either positive or negative results on the organization. Similar findings have been reported by Monteau (1975).

Rosenthal and Mezoff (1980) have taken this idea one

step further. "Trainers tend to justify their functions solely on the basis of intended outcomes" (p. 102). Surprisingly, the ceremonial effects of training may represent a more potent change agent than the intended effects of training. They identify five ceremonial effects of training (which are geared towards management training):

1) Training can act as a motivator

Training can foster inclusion, facilitate employee commitment to organizational goals and it demonstrates the willingness on the part of the organization to invest it its employees.

2) Training can build employee confidence and self-esteem

This is independent of the content of the training and results from the very act of being selected for training.

3) Training can help reduce stress

Training serves as a break from the regular routine of work (a change of pace) and can allow peers to share frustrations among themselves.

4) Training can improve relations between participants and back home co-workers

5) Training can help new managers through role changes

This is especially true when promoting a line worker to a supervisory role.

Another important aspect of evaluation lies in

identifying to whom the results of the evaluation are being directed. Rosenberg (1987) views all the participants in the training process as being potential users of evaluation results. Students, instructors, course developers, training management and corporate management are all included. Although certain baseline evaluation information will be desired by all groups there is information that will be specific to particular groups. Rosenberg points out that it is imperative that the right kind of evaluation results be given to different users if it is to be effective. This view is echoed by Hesseling (1966), "Every potential consumer of evaluation studies has his own objectives and prerequisites when considering the results of training" (p. 49).

Rosenberg has also developed a five step approach to evaluation;

1. Identify the need to evaluate
2. Develop the evaluation plan
3. Collect Data
4. Analyze the data
5. Report evaluation data

This five step approach to training evaluation is similar to the steps involved in a number of training and instructional design models, for example: Delaney (1987); Dick and Carey, (1985); Gagne et al, (1988). The similarity exists despite the fact that in each of these models evaluation exists as a

component of the model, typically placed at the end of the process. Tracey (1968) sees evaluation as a cooperative effort. All who participate in the appraisal process, or who are affected by it, must participate in the evaluation. Warr et al, (1970) and Caffarella (1988) recognize that evaluation is a continuous process and not simply an ex-post-facto application. Combining these arguments, there is a sense of agreement between the processes of training and evaluation. This idea will be explored further at a later point in this thesis.

Randall (1975) divides trainers into three different groups based upon their view of evaluation. The first group, Negativists, regard evaluation of formal training as either impossible or unnecessary. The second group, Positivists, regard evaluation as an essential component of the training process and view scientific experimentation as the only form of evaluation that is acceptable. The last group, Frustrates, understand that evaluation is important, but have yet to find an acceptable methodology to deal with evaluation.

Chapter 4

Reasons Why Economic Justification Of The Training Function Is Rarely Performed

The evaluation of training efforts, beyond cursory investigations conducted at the reaction level (Kirkpatrick, 1975), is not prominent in most organizations (Hawthorne, 1987; Monteau, 1987). Training evaluations conducted at the outcome level (Kirkpatrick, 1975) are even more rare (Hawthorne, 1987; Kirkpatrick, 1975; Spencer, 1986). Hawthorne (1987) reviewed 22 studies on evaluation between 1964 - 1979 and found that not one of them dealt with the cost of training. An 1988 ASTD (American Society of Training and Development) poll of organizations that led in training evaluation found that only twenty percent evaluated in terms of economic effect (Carnevale and Schulz, 1990).

Various authors have provided a number of different reasons that attempt to explain why the economic justification of the training function is not performed with the same frequency and rigor as in other corporate functions, if at all. Some of these explanations deal with lack of training evaluation in general and others are specific to economic justification.

Difficulty

Talking about training evaluation in general, Hesseling (1966) states:

> The complexity of the training process has been recognized. We have to deal with human behaviour, that is purposive behaviour, where personality, cultural value, organizational

> characteristics and environment are intervening variables. In each evaluation the description of the difficulties met is more impressive than the results obtained" (p.5).

Burke (1969), Warr, Bird and Rackham (1970) Kenney and Donnelly (1972), Odiorne (1975), Johnston (1975), and Zenger and Hargis (1982) all echo similar thoughts on the difficulty of evaluating training in general.

Ingols (1987) makes a distinction between what she defines as internal and external training and quotes from Management Education in Europe (1977, p. 20):

> External training is orientated to the individual, above all at the middle and top management levels, and to the small enterprises. Its objectives are linked to the development of the person and in content it is concerned rather with general management training necessitating a considerable amount of pedagogical investment. Internal training is, on the other hand, orientated rather to the enterprise as an organization, and towards the lowest hierarchial levels in order to ensure on the job training and the integration of all the employees within the enterprise. It deals above all with short training, based on a previous diagnosis (p. 81).

This is a valuable distinction because it indicates that different types of training will have different levels of difficulty of evaluation associated with them. Clearly, in the case of internal training where training is a result of some analysis, evaluation will not necessarily be easy, but it will be easier than in the case of external training which exists over a longer term and does not necessarily

have clearly defined operational goals.

With respect to the difficulty of economic justification, the determination of training costs and the establishment of the monetary benefits of training are problematic. Hawthorne (1987), Monteau (1987), and Odiorne (1979), among others, view the identification and measurement of training costs as posing a serious problem to trainers.

Much more attention has been paid to the problems of determining the benefits of training in the literature. F. J. Macdonald (1987) argues that "establishing the value of training outcomes is possible but difficult (p. 22). Roberts (1972) and Carnevale and Schulz (1990) acknowledge the problems associated with establishing the benefits of training because of the intangible nature of many benefits. Murdick (1975) describes some of the potential benefits as improved morale, keeping up-to-date with advances in technology, lower recruiting costs and a higher grade of applicant. Each of these in his opinion are "self evident benefits but are very difficult to attach an actual figure to" (p. 175). Kirkpatrick (1975) states:

> from an evaluation standpoint, it would be best to evaluate training programs directly in terms of the results desired. There are, however, so many complicating factors that it is extremely difficult if not impossible to evaluate certain kinds of programs in terms of results (p. 14).

In Kirkpatrick's evaluation model "Results" represent a

level four evaluation which in essence is an economic evaluation. It is also interesting to note his reference to "certain kinds of programs" being impossible to evaluate in economic terms. This is similar to Ingols' (1987) differentiation of internal and external training and the problems of evaluation associated with each. This idea of certain kinds of training being more susceptible to economic justification than others will be explored further later on.

Murdick (1975) supports economic justification of training efforts in general but does not think that it need be applied to management training. He argues that relatively few people participate in management and the cost is therefore negligible, and that the cost of management training is low, relative to the salary of managers. Additionally he points out that the contributions of managers are large relative to other employees in general.

At first glance Murdick's arguments seem logical. However, upon closer inspection, several problems can be identified. First, management, existing at the top of the organizational employment pyramid, represents a smaller percentage of the total organizational workforce. However, this does not necessarily mean that the absolute number of individuals in an organization that constitute management will be small. This will be determined by the size of the organization. Second, the costs associated with a training program are not determined solely by number of participants.

The type of training, and how and where it is conducted, also factor into the cost of training. Third, the relatively high salaries of management, from a cost-benefit point of view, creates a stronger, rather than a weaker, argument for justifying their participation in training activities.

Ownership

The concept of ownership is essentially the right to claim the responsibility for the results of training efforts. Keachie (1975) describes this as "difficulties in the evaluation of training are evident at the outset in the problem technically called the 'separation of variables': that is, how much of the improvement is due to training as compared to other factors" (p. 14). The argument for ownership being an impediment to evaluation is as follows: evaluation of training programs is going to involve time and other resources, it will cost, and if the benefits of the training program are to be claimed by non training functions then it is not worth the effort or the expense.

In a results evaluation this is especially true as indicated by Kilmurray and Lambert (1987). Results evaluation measures the impact of training on the organization's 'bottom line' business results (profits, costs, productivity and quality). Results evaluation looks at business effectiveness. This type of evaluation, although potentially useful, has not been conducted

frequently. The apparent problem with results evaluation is the large number of variables that the educator must identify and isolate in order to establish that a given result was indeed attributable to the training program as opposed to other corporate activities (p. 172)

With respect to management training in particular Odiorne (1975) claims that there are three general, tangible measures which can be used to determine the value of the contribution by management training to an organization: 1) specific production; 2) changes in specific results such as turnover; 3) the overall growth and profit of the company. The problem with using measures like these as Odiorne points out it that it is very difficult, if not perhaps impossible, to separate the effects of training from the impact of forces such as the condition of the market, the existence of stable money and the growth of the economy in general. Despite this difficulty, Odiorne argues that "there does seem to be a cause and effect relationship, however unmeasurable, between the fact that a company which is profitable customarily does management training" (p. 194). Kenney and Donnelly (1972) also discuss the problem of ownership as an impediment to evaluation and Carnevale and Schulz (1990) see it as a major reason why little economic justification of training is conducted.

Reporting Structure

Reporting structure refers to corporate hierarchies,

the corporate officers to which various organizational units report and the informal authority which has become attached to certain functional units. Typically, when training is a centralized corporate function the training manager will report to the Vice-President (or the Director) of Human Resources. More often than not the training function is not centralized, existing as a series of small departments or units within larger corporate functions such as sales, production or management (Cheek, 1973).

In the centralized case, many of the same problems faced by the training function are also experienced , perhaps even on a larger scale. Human Resources covers areas such as compensation, employee benefits, grievance and others in addition to staff training and development. All of these functions are traditionally viewed as cost only, i.e., they are not seen as making a contribution to the "bottom line" of an organization. This situation does not lend itself well to the concept of economic justification. Resources are allocated to the Human Resources function by senior management on a variety of factors (political, general financial situation of the corporation as a whole, whimsical) that usually do not include economic justification. The same is often true of the distribution of resources within the HR function by HR management.

In the latter case, where training is comprised of a series of smaller units within larger corporate functions,

training suffers because of a lack of identity and depends heavily upon operational managers who may know little about the importance or substance of training. As Kilmurray and Lambert (1987) state, this situation "lacks a formal linkage to senior management" (p. 180) and results in training not having a distinctive corporate identity and not being treated as other corporate functions.

Kenney and Donnelly (1972) indicate that the ideal structure would have the training function reporting directly to the Chief Executive Officer. The worst possible reporting structure is to have training reporting to Human Resources, especially in a corporation where Human Resources is not a function held in high esteem.

Costs Time and Money

Lott (1967) Randall (1975), Zenger and Hargis (1982), Spencer (1986), Cafarella (1988) and Carnevale and Schulz (1990) are among the authors who have indicated that the cost in terms of time and money are one of the primary reasons why evaluation of training efforts is not often performed at all, or without much enthusiasm and zeal. There can be no disputing the fact that evaluation is going to be expensive. Given that a results orientated evaluation is the most difficult (Kirkpatrick, 1975; Odiorne, 1979) then it follows that economic justification will be a relatively expensive form of evaluation. Intuitively, training is seen as valuable by most people in business and

industry. "However, in the rush of providing training programs on time and within budget evaluation of training is frequently left out as a nice-to-have addition" (May, Moore and Zammit, 1987, preface). This results in the dilemma of providing a sense of worth to management without a substantial history of evaluation.

Lack of Skill

Economic justification in the form of cost-benefit analysis, break-even analysis, operations research and other techniques require some specialized skills and knowledge. At a minimum an understanding of the relationship between cost and organization operational level (the categorization of costs as fixed or variable with respect to output) and the ability to adequately itemize and estimate future costs and benefits is essential. Spencer, in How to Calculate the Costs and Benefits of an HRD Program (1986), itemized "people do not know how" as one the five reasons why economic justification (the technique of Cost-Benefit Analysis) of training programs is not done. Kirkpatrick (1975) also argues that a lack of the skills required to perform an economic justification is a very important factor in so little evaluation of this sort being conducted.

Accounting Practices

The use of economic justification techniques requires that accurate records be kept of all costs associated with

training programs. The will include direct as well as indirect costs.

Traditional accounting practices (in Canada and the United States) do not follow Human Resource Accounting principles. The basic tenants of HR Accounting is that human resources (employees) are recognized as assets, specifically long term assets. Given this, expenditures that are aimed at improving the ability of employees to contribute to the organization are not expenses but capitalized and subsequently depreciated using a substantiated depreciation methodology.

Currently in Canada, using guidelines established by the CICA (Canadian Institute of Chartered Accountants and in the United States following the AICPA (American Institute of Certified Public Accountants), expenditures related to training are usually treated as expenses in the period in which they occur unless they are directly related to the installation and set-up of capital equipment, in which case they are added to the value of the equipment and treated as capital costs. Douthat (1970) argues:

> the realities of personnel training and development programs suggest that accountants are not doing their job of properly segregating assets and expenses. Furthermore, the conventional treatment of training costs as expenses when incurred destroys income measurement and penalizes managers for developing human resources (p. 2).

He further argues that the meagre efforts made to represent

employees as assets in financial statements is not acceptable either in practical or theoretical accounting terms.

The reason for his argument on theoretical grounds is because of the "Matching Principle", which is one of the basic principles of accounting which states that revenues must be recorded in the period in which they are earned and expenditures for assets must only be expensed as they are used (Dauderis, 1990). Given that there is a reason to believe that the benefits associated with training employees would result in benefits to the company beyond the year in which these expenses are incurred there exists a rational for the capitalization of training (or some portion) of training expenditures (Carnevale and Schulz 1990, Schultz 1961).

Accountants would counter this argument on the basis that training expenditures are essentially consumptive in nature, that they maintain the work force rather than make it better (Douthat, 1970; Monteau, 1987). Further, accountants find training expenditures to be immaterial and argue therefore they do not warrant capitalization (Douthat, 1970).

Schultz (1961) and Monteau (1975) see training expenditures as having both consumptive and capital elements. Dealing with this question is one of the difficulties in doing an economic justification.

Accounting practices have an impact that extends beyond creating barriers to conducting economic justification of training efforts, by creating a barrier to training itself. Training involves a variety of expenditures as previously mentioned. The bulk of these costs are (employee participation and associated costs) are charged to the department whose employees are receiving the training. The manager of this department, more likely than not, will be evaluated to some extent on the basis of monthly or quarterly reports showing the "bottom line". This in fact penalizes the manager for allowing his employees to receive training and forces him to view human resource development as an expense to be minimized instead of an asset to be optimized (Douthat, 1970; Bloomberg, 1989; Carnevale and Schulz, 1990).

Fear

Spencer (1986) argues that HRD professionals fear that an unfavourable economic justification outcome (where the monetary cost of a program outweighs the monetary benefits) will jeopardize their employment within an organization.

Not Required by Management

Randall (1975), Zenger and Hargis (1982), Spencer (1986) and Carnevale and Schulz (1990) are among the authors that have indicated that one of the reasons that economic justification of training efforts is not done is because

there is no demand for it by senior management. "Managements which expect and receive a good return from manufacturing and sales expect and receive no indication of return on their investment from their training departments" (Randall, in Kirkpatrick, 1975, p. 136). This is in part due to the reasons mentioned above. It may also have some historical foundations. The onset of World War II and the massive demands it placed on industry created a training explosion. Because this training effort was associated with the war effort evaluation of the training was not seen as crucial and did not seem to warrant the resources required. In addition, at the time the total expenditure on training was relatively small and could effectively be ignored. When the war ended this practice, to a large extent, simply continued (Hawthorne, 1987; Randall, 1975).

Chapter 5

Counter Arguments To Reasons Why Economic Justification Of The Training Function Is Rarely Performed

One of the stated objectives of this thesis, as indicated in the introduction, involves analyzing the literature in order to determine whether the reasons identified in the previous section are strong enough to preclude the use of economic justification. In each case, counter arguments will be presented which will be followed by a determination, on the part of the author, as to whether or not that particular reason precludes the use of economically justifying training efforts.

Difficulty

"For years the biggest bogeyman in the Human resources development community has been the legendary difficulty of expressing HRD programs in cost-benefit terms" (Spencer, 1984, p. 40). The difficulty, primarily, is associated with many of the benefits of the training function being identified as intangible and therefore not suitable for use in cost-benefit calculations (Kirkpatrick, 1975; Murdick, 1975; Roberts, 1972).

Lerda and Cross (1975) would strongly disagree; "the statement 'training is intangible and therefore cannot be evaluated' is a fallacy, a trap into which we fall only too often" (p. 213). Following Spencer's (1986) equating the benefits of training with the costing of the problem that

the training program is attempting to solve Bowsher (1990) states

> there is a definite, calculable cost for not training employees. Not only is the CEO interested in knowing it, but so is the chief financial officer, and so are all the major functional officers in areas such as manufacturing, marketing , operations and distribution. If this story has not been delivered to senior executives, then the training department deserves to have its resources cut because it's not really doing its job. (p. 65).

Another point of view accepts that some of the benefits associated with training will be intangible. That, however, does not prevent those benefits that are measurable from being identified and used for the purposes of economic justification (Carnevale and Schulz, 1990; Murdick, 1975; Roberts, 1972; Zenger and Hargis, 1982).

Meissner (1975) takes a different perspective stating "the inherent difficulties of measuring input-output ratios of the training function does not mean that it is entirely impossible, on the contrary it constitutes an exiting challenge to imaginative researchers" (p. 230).

Odiorne (1975) acknowledges that despite the problems that intangible results pose, they must be factored into training evaluation. Without proposing a methodology for doing so he recommends that intangible benefits be translated into a measurable index without stretching the limitations of logic too far.

Nagel (1983) points out that the application of cost-

benefit analysis techniques to situations where "the costs of various decisions are in dollars and the benefits are in non-monetary units, especially units that relate to different kinds of output" (p. 37) is problematic. In an attempt to deal with this problem Nagel (1983) has developed a framework (not specific to intangible training benefits) that allows nonmonetary benefits to be compared against dollar costs. His framework attempts to "codify or make more explicit what good decision makers intuitively do, so people who are not such good intuitive decision makers can improve their decision-making and evaluative skills" (p. 38).

Nagel's (1983) framework is presented in various stages. In its simplest form the framework deals with projects (decisions) that result in the same kind of output, the benefits of which can be measured in monetary terms but which are mutually exclusive. Here a straightforward cost-benefit analysis is conducted. The next iteration in the framework allows for non-mutually exclusive projects again using a straightforward cost-benefit analysis as the decision criteria. The complexity of the framework is increased progressively to the point where it deals with non-mutually exclusive projects that have different kinds of benefits that are not measurable in dollar terms. Here Nagel (1983) uses what he refers to as "a paired-comparisons elimination contest" (p. 51). This involves comparing one

project against another and determining which project is superior. The superior project is then compared against another project and so on. However the evaluation criteria at the stage in the framework is no longer based upon a straightforward cost-benefit analysis. It is much more subjective and involves decisions as the following example illustrates: "The comparison question thus becomes, is the incremental satisfaction in going from 3.5 points to 13.5 miles worth the incremental cost of $8.00" (Nagel, 1983, p. 52), which is essentially a cost-effectiveness decision criteria.

There are two major problems in attempting to use Nagel's framework to justify training efforts in economic terms. First, the decision criteria is expressed in terms of cost as opposed to profit. As discussed previously, this serves to enhance senior management's perception of the training function as a user of resources rather than a contributor to profit. Second, the application of the framework results in a decision which is highly subjective in nature. The very purpose of economic justification is to provide information upon which objective decisions can be made.

Cheek (1973), does not believe that it is necessary to actually convert intangible benefits into measurable, dollar terms. Intangibles, argues Cheek, have merit unto themselves and can be factored into the cost-benefit

framework once all measurable benefits have been identified. For example, when two courses of action have approximately equal estimated costs and benefits the existence of intangible benefits can help make the appropriate selection.

With respect to the determination of costs, Greer (1992), Head (1985), Mirabal (1978), and Spencer (1986) have developed models that can aid HRD professionals in estimating the costs associated with a training program and to track the costs as a program is implemented.

The problems associated with the costing of training efforts and the measurement of training benefits impede the use of cost-benefit analysis in the training domain but do not represent factors that prevent it from being used.

Ownership

"For all instances of training, it is reasonable to expect that someone will ask about the utility of the training. In answering, the link between training and profitability must be made explicit" (Macdonald, 1987). If the results of cost-benefit analysis of training functions are to be meaningful it is imperative that the benefits identified can be linked to training efforts.

Macdonald (1987) states "training's value is in direct proportion to its contribution to the profitability of a division for which a training program has been developed" (p. 32). Training is a service function within an organization. As such, the results of training efforts

accrue to training's clients. Claiming ownership of those results, across corporate functional boundaries is difficult. The existence of other confounding factors, such as state of the economy, etc, (see previous discussion in chapter 4) makes ownership even more problematic.

Zenger and Hargis (1982) discuss four quasi-experimental and experimental designs that can be used for the purposes of training evaluation. "When any one of these procedures are used in evaluation, one can say with an increased degree of assurance that training was responsible for the change" (p. 13). The use of quantitative research methodologies to claim ownership of the results of training efforts has also been advocated by Andrew (1957), Burke (1969), Carnevale and Schulz (1990), and Odiorne (1979). Odiorne (1979) points out that the use of experimental methodologies requires money and expertise. However, HRD professionals do not necessarily have to conduct this kind of research. It is important to keep abreast of the literature and use the results of previously conducted studies to create arguments for ownership.

In as much as ownership has been identified as a reason for not conducting cost-benefit analysis, the application of cost-benefit analysis to training efforts can nullify the problem of ownership. When applied prospectively, cost-benefit analysis requires that the benefits associated with a proposed training program be identified. If the program

is implemented, and the cost and benefits are monitored, the ownership of the results are much more clearly identified with the training solution (Carnevale and Schulz, 1990; Cheek, 1973).

Credibility of the training function can also have a significant impact on the ability of training staff to claim ownership of the results of their efforts. When the training department is a highly regarded corporate function, with a proven record of success, ownership in not a substantial problem (Odiorne, 1979). Credibility, as an factor in ownership, has a recursive element. Before the training function can gain credibility it must first prove it's worth. In order to prove its worth, training efforts must be evaluated, using economic criteria, and be shown to contribute to the "bottom line" efforts of the corporation.

The type of training conducted can create different levels of ownership problems. It is much more difficult to link the results of management training programs, especially at senior levels, to changes in profitability. (Harper, 1975; Ingols, 1987: Kirkpatrick, 1975).

Ownership of training results does not prevent the use of cost-benefit analysis as a technique for evaluating training. On the contrary, as indicted above, it may in fact solve many of the problems associated with ownership.

Reporting Structure

The problems associated with reporting structure affect

training as a function more than they do inhibit the application of cost-benefit analysis to training efforts. Because managerial accounting, as previously discussed, is highly subjective, the definitions of training costs can vary among organizational units. To the extent that the training function is decentralized, it is important that various training departments use a single set of criteria for costing training.

Similar to the ownership problem, the ability to demonstrate the economic value of training may in fact alleviate some of the problems associated with reporting structure. The ability to generate profit increases the credibility and prestige of a corporate activity with senior management. If the training function can prove its worth, its placement in the organization hierarchy may improve, as has been the case at IBM, Motorola, Xerox and Federal Express (Bushnell, 1990).

Costs Time and Money

Evaluation, at any level, will involve expenditures of time and money. The real issue to be addressed, as in the case of training efforts, is whether or not the expenditures are worthwhile in light of the benefits that accrue as a result of the activity. The decision to use cost-benefit analysis it in itself a cost-benefit analysis issue (Spencer, 1986). Lott (1975) states "evaluation should be an investment which produces, overall, a favourable

cost/benefit ratio: (p. 244).

Zenger and Hargis (1982) view training evaluation as a relatively inexpensive activity when compared to training costs in total. Rosenberg (1987) argues that in the long run evaluation (assuming that is it conducted properly) will save both time and money and will ultimately contribute to the profitability of a corporation.

All corporate functions involve the use of resources. As such, if all corporate activities that cost time or money were not performed, corporations would cease to exist.

Lack of Skill

The lack of evaluation skills in general, and economic analysis skills in particular, poses a genuine problem. In no way, however, can lack of skill be regarded as a reason for never applying cost-benefit analysis techniques to training efforts. The level of skill an individual possesses in any given area can change. The training function exists, in a large part, to deal with skill deficiencies.

Accounting Practices

Current tax laws and financial accounting practices discriminate against the training function by treating training expenditures as expenses. This situation may or may not change. Based upon a research project conducted by the American Society for Training and Development, The

Consensus Accounting Model has been developed and represents the consensus of training and accounting experts. "The Consensus Accounting Model ties the procedures of existing accounting practices to the desired outcomes sought by management" (Carnevale and Schulz, 1990, p. s-9). This is still a long way from acknowledging the value of human capital in financial terms but it is step in that direction.

Accounting is generally divided into two separate categories: financial accounting and managerial accounting (Anthony et al, 1985; Dauderis, 1990; Garrison, 1988). Anthony et al (1985) state "The principal objective of financial accounting is to furnish information that is useful to investors and other persons who are outside the organization" (p. 4). Similarly, "the principal objective of management accounting is to furnish information that is useful to managers, that is, to persons who are on the inside of the organization" (p. 4).

Financial accounting, because of its focus on external users, "is a single process, governed by a single set of generally accepted accounting principles" (Anthony et al, 1985, p. 13). GAAP is defined in Canada by the Canadian Institute of Chartered Accountants (CICA) and in the United States by the American Institute of Certified Public Accountants (AICPA). In both cases GAAP constitutes a legal definition of accounting practices for the purposes of

financial statement preparation.

Management accounting, because of its focus on internal users, is not bound by GAAP. For internal purposes, accounting can be conducted in any way that provides useful financial information for decision making purposes. Carnevale and Schulz (1990) argue that conventional accounting methods do not provide management with the right kind of information that allows for useful decision making and planning in the HRD environment. HRD staff are, however, free to adopt new accounting methods that will provide managers with better information.

Fear

Fear, as described by Spencer (1986), relates to the apprehension HRD professionals have in applying cost-benefit analysis to their training programs because it might reveal that their efforts are not worth the cost. This same reason can be attributed to the general lack of evaluation, at any level, in the training environment. Fear, as a reason, is realistic. Evaluations are conducted to determine what has worked and what has not worked, based on some predefined criteria.

First, as previously discussed, there exists a general consensus that, at least on an intuitive level, training has value. Cost-benefit analysis represents an opportunity to move beyond the intuitive level and demonstrate that training has measurable economic value.

Second, as Spencer (1986) points out, the application of cost-benefit analysis to training efforts can be a no lose scenario for HRD professionals. When the results of the cost-benefit analysis indicate that a training program has the potential to add to corporate profit then these results should be communicated to senior management. When the results are not favourable economically, the HRD staff should recommend that the program not be implemented and take full credit for identifying the potential loss. This should also be communicated to senior management.

Not Required by Management

One of the reasons that senior management has not required economic justification of training efforts is that they have viewed the training function as an expense rather than a generator of profit. The application of cost-benefit analysis to training efforts will hopefully change this view and convince management of the value of the training function.

Urban et al (1985) state: "as training professionals, we are challenged to evaluate corporate development activities before evaluation is forced upon us" (p. 71). Macdonald (1987) argues that HRD professional must be proactive in promoting their efforts. The marketing of training, by HRD staff, to senior management, is important and the selling point will be training's contribution to corporate profit.

Chapter 6

Developing A Framework For Applying Cost-Benefit Analysis To Training Programs

Introduction

The potential benefits accruing to the training function resulting from the application of cost-benefit analysis to training programs have been discussed. Numerous obstacles have been identified in the literature that impede training evaluation in general, and economic justification, a fourth level evaluation, in particular. In this section of the thesis an attempt shall be made to develop a framework that will aid HRD professionals in applying cost-benefit analysis to training program, paying particular attention to the obstacles identified. This section will not provide a complete understanding of all the elements of cost-benefit analysis and is not intended as a substitute for texts dealing with cost-benefit analysis. Cost-Benefit Analysis by Mishan (1982) or The Principles of Practical Cost-Benefit Analysis by Sugden and Williams (1978) should be consulted for a thorough understanding, in conceptual and practical terms, of cost-benefit analysis.

The intent here is focused primarily on orientating HRD staff, who have little or no experience in cost-benefit applications, to the cost-benefit analysis environment and how it can be applied to the training function.

The application of cost-benefit analysis to the training environment cannot be performed with one hundred

percent accuracy. Irrespective of the area in which cost-benefit analysis (prospective) is implemented, the requirement that costs and benefits be estimated creates inherent error (Hawthorne, 1987; Popham, 1988). Many of the benefits of training are intangible (Kirkpatrick, 1975). Attempts to convert intangible training benefits into monetary values will also contain a certain degree of error. This is mentioned, not meant to detract from the importance of attempting to economically justify the training function, but to clarify, to HRD staff, that the cost-benefits figures arrived at from an analysis will never be one hundred percent accurate and attempts to achieve this level of accuracy will be a waste of time. A balance between accuracy and effort will be necessary.

It must also be made clear that the application of cost-benefit analysis to training efforts, as a fourth level evaluation, should not interfere with competent HRD practice. In does not replace needs assessment, content analysis, or any other vital activity in the training process.

Cost-Benefit Analysis Redefined

The existence of intangible training benefits creates problems in economically justifying the costs of training. Certain intangible benefits can, and should be converted into measurable dollar benefits (Hawthorne, 1987; Kirkpatrick, 1975). Examples are training that results in

reduced absenteeism or turnover, among others. Changes in organizational rates of absenteeism and turnover, that result from training activities, can easily be translated into monetary benefits accruing to the decision to train (Spencer, 1986). For other instances of intangible training benefits, it can be much more difficult to determine an associate monetary value. The capability of training programs to increase participant self-confidence and self-esteem, (Rosenthal and Mezoff, 1980) is an example.

Whether or not all the potential benefits, intended and unintended, (Ingols, 1987) of training programs can be quantified is a highly theoretical question. For the purpose of this thesis, it is assumed that certain training benefits will be impossible to quantify. This does not mean that intangible training benefits will not have an impact upon corporate profits, only that their financial impact cannot be measured (Kirkpatrick, 1975; Rosenthal and Mezoff, 1980).

Cost-benefit analysis, typically, has been used as a technique that compares the monetary costs of a decision to the monetary benefits resulting from a decision (Mishan, 1982; Wood and Campbell, 1982). Clearly, intangible training benefits do not fit into the current conception of cost-benefit analysis. However, intangible benefits represent important training outcomes (Kirkpatrick, 1975).

Sugden and Williams (1978) define cost-benefit analysis

as "a way of organizing thought, a way of reasoning about decision making" (preface). Using this definition, the scope of cost-benefit analysis will be broadened to include intangible benefits as part of the decision process for the purposes of the framework that will presented.

Inclusion of intangible training benefits will serve the following purposes. First, when a proposed training solution has been determined to have approximately equal monetary costs and benefits, as a result of a cost-benefit analysis, the existence of identified intangible benefits can result in the decision to implement the training solution. The effect of incorporating intangible benefits into the cost-benefit framework is more dramatic when the estimated costs of a proposed training activity are marginally to slightly (more precise boundaries are impossible due to inherent error and the lack of research in the area) higher that the estimated benefits. Without recognizing the presence of intangible benefits the decision, based strictly on monetary figures, would be not to implement the training activity. When intangibles are factored in, to they extent that they exist, the decision could change.

Second, the incorporation of intangibles into the justification process will force a more thorough analysis of all the potential beneficial outcomes of training activities. This will include unintended, as well as

intended outcomes. Unintended training benefits can be either tangible or intangible (Ingols, 1987). Obviously, unintended outcomes cannot be identified before training is actually conducted but only after implementation. In instances where the costs of a training program will be substantial and the benefits truly impossible to quantify the use of Nagel's (1983) framework may be appropriate.

Cost-Benefit Analysis as Part of the Training Process

The focus of the thesis thus far has been to demonstrate the importance of economically justifying the training function to senior management. Cost-benefit analysis has been presented as a technique of economic justification for this purpose. Following Kirkpatrick's (1975) four levels of training evaluation it is clear that cost-benefit analysis represents a level four training evaluation.

Cost benefit-analysis can also serve other functions. First, it can help to make training more cost efficient by identifying all of the costs incurred during the implementation of a training program. Cost responsibility, generically, through accounting for the costs of a program as it occurs, determines the cost of individual activities associated with a program. As such, by identifying cost peculiarities the program can be made more cost effective (Anthony et al, 1985; Horngren, 1975).

Second, applying cost-benefit analysis to the training

function will help ensure that limited HRD resources will be used to the greatest economic benefit of the organization. To the extent that the demand for HRD interventions exceeds the HRD resources available, a determination as to which projects should be implemented will have to be made. Applying cost-benefit analysis to potential projects will allow projects to be ranked according to their potential contributions to the organization in monetary terms. The application of HRD resources to projects can then be based on potential project contributions to profit (Reddy, 1979).

In order to take full advantage of all possible advantages offered by cost-benefit analysis it must become part of the HRD process. According to Andrieu (1977) and Reddy (1979), cost-benefit analyses of training programs have concentrated on retrospective application to single projects. Retrospective cost-benefit analysis is useful in determining the extent to which the benefits accruing to a decision outweigh the costs incurred as a result of that decision (Anderson and Kasl, 1982). It does not, however, allow for the effective allocation of limited resources to projects.

Retrospective cost-benefit analysis is an example of a level four evaluation. However, Kirkpatrick's (1975) evaluation model represents summative evaluation in that it is concerned with valuing the worth of training at different levels (Dick and Carey, 1985). Summative evaluation is

usually the final step in instructional design models (Dick and Carey; Gagne et al, 1988). Prospective cost-benefit analysis, applied before a project is implemented, clearly does not represent summative evaluation.

To the extent that prospective cost-benefit analysis (in estimating the benefits associated with solving a performance problem, and therefore placing an upper limit on any the cost of any proposed solution to that problem) has an impact on the design of training programs, it could be considered as formative evaluation as defined by Dick and Carey, 1985. When changes are made to the design of the training program as a result of monitoring the costs of a the program as it is being developed and implemented, cost-benefit analysis is clearly being used as a technique for formative evaluation.

The framework that follows requires that cost-benefit analysis be viewed as an integral part of the training process and of the evaluation process. Beginning with a performance problem being identified and ending with a report to management on the value of a program, cost-benefit analysis will be a central theme of the training process.

Limitations of the Framework

The application of cost-benefit analysis in prospective and retrospective fashion, and the recognition of cost-benefit analysis as part of the training process represents a new approach to training. The framework, presented in

chapter 7, is very crude. Murdick (1975), referring to the possibility of translating intangible benefits of training into monetary values, states:

> Advances in the solution of many complex problems are made by early or by establishing reasonable limits for the parameters involved. These first attempts often trigger new approaches or refinements (p. 182)

It is hoped that this will be the case. If interest can be generated in applying cost-benefit analysis to the training function that results in research, both empirical and conceptual, being conducted that will lead to dramatic improvements in the framework, its value will be substantiated.

Chapter 7

A Framework For Applying Cost-Benefit Analysis In The Corporate Training Environment

The framework is presented in two phases. The first phase represents an attempt to orientate HRD professionals to the process of applying cost-benefit analysis to HRD efforts. This recognizes that the process will be difficult and will involve the acquisition of new skills by HRD staff.

In the second phase, a new framework will be presented assuming that the skills that phase one should have helped to develop have in fact been acquired by the HRD professional.

Phase 1

Step 1 Track Training Program Costs

For the purposes of cost-benefit analysis of training activities it is essential that the full cost of training programs be determined. Full cost includes all the direct costs of a program plus a share of the overhead costs associated with an organizational unit (Garrison, 1988). This will exceed the budget that is typically associated with a training program. Training program budgets will usually cover only out of pocket expenditures and perhaps an allocation covering the cost for HRD staff time. This does not include the costs of participant time or overhead allocation.

It is important that the HRD professional become accustomed to accounting for full cost. One way to accomplish this is to begin tracking the costs of training programs. This must be done from the inception of a program to its completion. The major cost categories, identified in the Consensus Accounting Model (Carnevale and Schulz, 1990) for training programs are as follows:

Direct Costs

1) Personnel

A) Salaries and benefits of supervisory and non-supervisory HRD staff directly engaged in developing, delivering, evaluating and supporting training programs. Direct personnel costs should be calculated on a per-day basis, where cost per day can be obtained by dividing annual salary (which must include fringe benefits) on an individual by the number of working days in a year.

B) Salaries and benefits of other company employees who assist training staff by serving as resources for developing or delivering training. This would include subject matter experts and line managers, among others, who participate in the training program . The full labour cost of these participants should be determined.

C) Salaries and benefits of trainees. The full labour cost of trainees must be determined.

D) Fees and expenses reimbursed to people from outside the organization who render services to the training

department, and that can be associated with a particular training program.

2) Outside Goods and Services

A) Program materials and supplies

B) Outside printing and reproduction costs

C) Equipment rental or lease

D) Equipment purchase

In all instances of outside goods and services in order that the costs be classified as direct they must be associated with a single training program. Costs incurred for goods and services that are to be used by a number of different programs or by the training unit as a whole represent indirect costs.

3) Facilities

Facilities costs include expenditures for classroom laboratory, or learning centre rental for a given training program.

4) Travel

Travel includes actual travel costs (airfare, train fare, bus fare, etc), accommodation, daily expense allowances and other incidental expenses associated with travel. This must be identified and accumulated for all persons involved in the training program.

Indirect costs

1) Materials

General office expenses such as stationery,

photocopying, postage, etc., that is incurred by a training unit that cannot be easily traced to a given training program.

2) Equipment

Depreciation on equipment that is purchased to be used as general resources, serving all training programs, as well as the maintenance costs associated with the equipment are indirect equipment costs.

3) Facilities

Expenses that are incurred for general office space and training facilities (utilities, cleaning etc.) represent indirect facilities costs

4) General and Administrative

This can include travels costs for HRD management and staff that cannot be associated with a particular training program. Training department management and staff salaries and benefits that cannot be linked to particular training programs as well as allocations to training departments of the costs of general and administrative expenses at the corporate level.

To anyone unfamiliar with accounting procedures the determination of the amount for these cost categories will seem like an impossible task. Certainly, for some of the categories, such as indirect general and administrative costs, the HRD professional will simply not have access to the information required to arrive at any realistic figure.

Certainly, the calculation of indirect costs will be much more difficult than that of direct costs. Spencer (1984) has developed a rule of thumb that eliminates many of the problems associated with the calculation of indirect costs. Full labour cost, roughly calculated as three times direct labour cost, includes employee benefits and indirect costs associated with a person's time. In as much as this is easier to do, rule-of-thumb cost factors are averages that should be avoided unless no better information can be obtained. This is especially true for training programs involving video, or computer-based applications. Rules-of-thumb designed for traditional print-based instructional materials will not be suited to these applications. Additionally, rules-of-thumb are industry averages that may or may not represent the cost factors in a given organization.

A more accurate approach would have the HRD professional develop a liaison with the corporate accounting department. Corporate accounting departments gather and process enormous amounts of cost data. That is part of their function. Accountants are educated and trained to deal with cost identification and allocation. HRD professionals (perhaps with rare exceptions) will not be professional accountants and therefore cannot be expected to have expertise in the area of accounting and finance. HRD professionals should, however, be capable of utilizing the

knowledge and expertise of subject matter experts (McLagan, 1989). Extending the concept of subject matter experts, in the context of the training environment, to include accounting and finance experts that can potentially play a role in the training process would not seem too problematic.

An additional benefit of involving the corporate accountants in training evaluation is that they can provide external evaluation. Brandenberg (1987), Hesseling (1966) and Popham (1988) refer to the importance of external evaluation if evaluation results are to be credible.

In addition to corporate accounting staff, managers or supervisors from the organizational unit for which the training is being conducted can also be consulted. While they may not possess as high a level of expertise in accounting as corporate accounting staff, their understanding and familiarity with their organizational unit may provide valuable insight.

HRD professionals must actively solicit the involvement of interested parties in all aspects of the training process (Dick and Carey, 1885; Gagne et al, 1988). This is especially true of management involvement (Ingols, in May et al, 1987; Moore, 1975). If cost-benefit analysis is to be considered as part of the training process, the solicitation of the expertise of unit management for which training is being conducted may not only provide valuable information to the HRD professional, but may also serve to entrench unit

management as an active participant in the training process.

As previously stated cost-benefit is not an exact science. One hundred percent precision is neither possible nor necessary. Corporate accountants may be able to supply the HRD professional with average cost information which provides sufficient accuracy for the purposes of cost-benefit analysis. For example, determining trainees salaries can be difficult (or impossible in the case of union and/or corporate policies regarding access to private information) and time consuming. Corporate accountants may be in the position to provide average salary figures that the HRD professional can use. The extent to which the trainees form a homogeneous employment group will determine the feasibility of this approach.

The cost categories presented by Carnevale and Schulz (1990), although quite complete from an accounting perspective, do not represent the only attempt to identify training costs. Greer (1992) and Spencer (1986) have developed similar categories that can also be useful. These, however, are meant only as guides, or temporary bridges, to be used by the HRD professional until a more thorough understanding of costs and accounting procedures is gained. This will come from experience, interaction with the corporate accounting office, and if warranted, self study. The HRD professional should continue tracking training program costs until they feel comfortable enough to

proceed to step 2.

Step 2 Estimating Training Program Costs

Regarding cost-benefit analysis as a activity that underlies the entire training process requires that prospective cost-benefit analysis be applied. Before a determination (using economic criteria) can be made as to whether a training program should be implemented, the costs and benefits of that program must be estimated. As discussed earlier (Hawthorne, 1987) the estimation of training costs can be difficult. The knowledge, skill, and experience gained from tracking training program costs should prepare the HRD professional for this task.

Mirabal (1978) describes a model for forecasting training costs called the training cost model. Originally developed in 1972, the Training Cost Model has been used in the U.S. Civil Service Commission and a number of other U.S. federal, state and local government agencies. Similar in approach to the cost categories identified in the Consensus Accounting Model, the Training Cost Model can be used as a guide for HRD professionals. Because it makes use of a number of rules-of-thumb that may or may not adequately represent the cost structure of a given training department or unit, strict adherence to its methodology cannot be advised.

The HRD professional should pay special attention to the relationship between the costs of training and the

training output levels (number of trainees, training hours per course, etc.). The estimation of training costs will be much easier when the individual costs components of training can be identified as fixed or variable. It can be facilitated even further if the relationship between variable cost components and training outputs can be established. When this information is known, a cost formula for a training program can be generated that can be used to estimate total program costs (Anthony et al, 1985). The formula is in the form

$$TPC = TFC + (VC_1) + A(VC_2) + A(VC3) + A(VC...)$$

Where TPC = total program costs

TFC = total fixed costs

A = estimated number of outputs

$VC_{subscript}$ = variable cost per unit

Having HRD professionals developing formulae for estimating training program costs may seem somewhat far-fetched. Obviously these kinds of results cannot be expected until the HRD professional has developed a reasonable degree of skill in analyzing costs. It will take time and effort, but it is possible.

It will also be important to closely track the costs of a training program for which a cost estimate has been made. Close monitoring will provide feedback to the HRD professional on the accuracy of the estimates. This is an iterative process that should develop the estimation skills

of HRD staff.

The question may arise as to why not simply have corporate accounting staff estimate and track the costs of training. First, accounting staff will not have a sufficient understanding of the training process to appreciate the full extent of all the cost implications of the training process to make accurate estimations. Second, the importance of cost-benefit analysis as a activity underlying the training process must be stressed. The HRD professional responsible for a particular training program is the ideal candidate for taking responsibility for the cost-benefit activities as well.

Step 3 Measuring Benefits Associated with Training Outcomes

This will likely be the most difficult and problematic aspect of the cost-benefit analysis process (Hawthorne, 1987; Odiorne, 1979; Kirkpatrick, 1975). Quantifying benefits will be less difficult in some training than others. Management training programs or external training programs (Ingols, 1987) where the quantification of benefits is very difficult (Monteau, 1987; Odiorne, 1979) should be avoided initially.

Another reason for avoiding management training initially revolves around the issue of ownership. Kirkpatrick (1975) argues that the results of management training are seen in general increases in growth and

profitability of the corporation. Linking such changes to training efforts is difficult. As previously discussed, the training function needs credibility to claim, at least in part, ownership of such changes.

The problems associated with applying cost-benefit analysis to management training require more investigation and research before they can be properly addressed. Hopefully, as the interest (and possibly demand) in economic justification increases, research will be done that will aid HRD professionals in coping with applying cost-benefit analysis to management training.

Economic justification represents a fourth level evaluation (Kirkpatrick, 1975). HRD staff may not be experienced in this level of evaluation but they should be familiar with learning and behaviour evaluation levels. As was the case with tracking costs, both the corporate accounting unit and the management of the unit for which training is being implemented can play a significant role. They can attempt to translate reaction, learning, and behaviour outcomes, identified by HRD staff, into monetary values.

Another obstacle to overcome is the determination of the time frame for which benefits can accrue to a particular training program (Carnevale and Schulz, 1990). Bartel and Borjas (1977) provide some help by creating a distinction between specific and general training. Specific training is

specific to a given job, and once the trained employee leaves that job the training no longer has value. General training is not specific to a particular job and has the potential to provide value for the entire period for which the trainee in employed by the organization. Schultz (1961) argues that human capital deteriorates when idle. Skills, acquired through training, can be lost over time through disuse. While providing general guidance the contributions of Bartel and Borjas, and Schultz do not constitute a methodology.

A starting point is required to determine training benefits. Assume that the results of training will last for a period of at least one year and determine the benefits accordingly. If, in the period of one year, the calculated benefits of training exceed the total cost of implementing the training problem then the training will have contributed to corporate profit. An attempt should be made to monitor the results for a longer period than this but the difficulties in doing so increase as does the time frame. Ownership will also be more problematic as time frame increases. This is an area where longitudinal research needs to be conducted to determine the relationship between training and benefits accruing due to training.

It may also be the case that after a one year time period that costs will exceed benefits for a given training program. If benefits do, in fact, accrue to training beyond

the one year time frame then clearly the results of the analysis will be prejudiced. Other than to make this limitation clear in presenting and reporting the results of the evaluation, little can be done.

To the extent that intangible benefits exist that cannot be translated into monetary value they should be documented. As discussed earlier this is extremely important and should not be overlooked.

Step 4 Estimating Training Benefits

Once a degree of experience in measuring training benefits has been gained, the HRD professional can then begin attempting to estimate benefits. As with costs, the results need to be monitored to provide feedback on the accuracy of the estimation. Popham (1988) and Spencer (1986) equate the potential benefits of a training program with the cost of the problem that has initiated the training process. This approach may make the estimation process somewhat simpler.

Step 5 Full Cost Benefit-Analysis Applied

Before progressing to this step, the HRD professional, should feel comfortable with estimating and tracking both the costs and benefits associated with training programs. Starting with the identification or the perception of a performance gap and the subsequent involvement of a HRD professional (Rossett, 1987) the cost-benefit analysis

process will begin. All expenditures from the inception of the project should be recorded. The term project is used as opposed to training program because until a needs assessment is conducted there is no guarantee that the recommended solution to the identified problem will involve training. It must be stressed again that using economic justification to evaluate must not detract from good HRD practice. If, in fact, the recommended solution does not involve training, a cost-benefit analysis can still be conducted on whatever course of action is implemented. Cost tracking must begin with the involvement of the HRD professional. Once the problem has been identified an attempt should be made to value the problem. This serves two functions. First, valuing the problem provides an estimate of the potential benefits of the training program. Second, the monetary figure obtained by valuing the problem will provide a guideline for determining the kind of training program that can be implemented. If an identified problem has a relatively low value then any recommended solution must be capable of being delivered at a cost equal to, or less than, the value of the problem to be economically feasible. This can help in determining an appropriate course of action from amongst a number of alternatives.

Once a course of action has been identified and an outline of the training program has been developed a cost estimate should be determined. Should the cost estimate

substantially exceed the estimated value of the problem, a less costly alternative solution should be developed and the process should begin again. If the cost estimate is below or close to the value estimate the training program can proceed. When the two figures are similar the existence of intangible training benefits plays an important role. They can be used to justify a training program when strict monetary analysis would result in the program being cancelled.

Once the training program begins (with the development stage) all costs are tracked. As development progresses actual costs should be compared with estimated costs. Substantial variances (actual exceeding estimated) require that the training solution be reexamined. If no substantial variances are incurred costs are tracked to the completion of the training program at which point the benefits can begin to be measured.

Training management, management of the unit receiving training, and corporate management must receive reports on the training evaluation including a project feasibility report (comparison of estimated costs with estimated benefits) as soon as possible to avoid ownership problems to the greatest possible.

Phase 2

Having gained some experience in applying cost benefit analysis, the HRD professional can proceed to phase 2. Phase 2 contains only three steps. Steps one through four, identified in phase 1, are geared towards developing essential skills and gaining experience in cost-benefit applications. Since it is assumed that this has been accomplished before proceeding to phase 2, these steps are not required.

Step 1 Determining When Cost-Benefit Analysis Should be Applied

Applying cost-benefit analysis will involve spending corporate resources. Cost-benefit analysis is presented in this thesis as a methodology for determining whether the benefits of training exceed the costs of training. However, as Spencer (1986) indicates, the decision to apply cost-benefit analysis is itself a cost-benefit question. This step is concerned with identifying the circumstances under which the application of cost-benefit analysis to the training function will not result in benefits that will justify the costs of the process. Two examples are presented below.

Cheek (1973) notes that certain training programs are required by law or by corporate agreement and have to be implemented. In this situation cost-benefit analysis is not required since the results of the analysis cannot have any

bearing on the decision to implement the training. As such, training that is required legally need not be subjected to cost-benefit analysis. This does not mean that such programs should be evaluated using other types of evaluation.

In accounting and auditing practice there exists what is known as the Materiality Principle (Dauderis, 1990). Essentially, materiality means that when the cost of an item (or the effect of an error) is small relative to the environment in which it exists, it can be ignored. the principle of materiality can also be effectively used in this framework. A HRD professional, experienced at costing training programs, can make a crude estimate of the full cost of solving a given performance problem. When this crude estimate results in a relatively small figure a more complete cost-benefit analysis is not required. The immaterial costs involved simply do not justify the resource expenditures required to conduct the analysis (Deming, 1979).

Step one is essentially a filtering process aimed at preventing unnecessary resource expenditures on cost-benefit analyses that will not provide valuable decision making information. Management training, especially senior management training, because of the problems of benefit valuation, may have to be filtered out as well. This is unfortunate and is currently a major limitation of this

framework. Research needs to be conducted on the correlation between management training expenditures and changes in organizational profits. Hopetully, this will result in techniques being developed that will allow management training to be incorporated into this framework.

Step 2 Cost-Benefit Analysis Applied

Once a performance problem has passed through the filtering stage in step one of the process cost-benefit analysis can be applied. This procedure has been identified in step 5 of phase one and need not be presented again.

Step 3 Reporting the Results

This will be the most important aspect of the entire framework. The purpose of the framework, perhaps lost in all the detail of its presentation, is to present a methodology that can be used to convince senior management of the value of the training function: To change the perception of training as an expense to an activity that contributes to the profitability of an organization. If this is to occur then the results of applying cost-benefit analysis to the training function must be presented to senior management, and the management of the organizational unit from which a project has been initiated.

Reporting results is a function that will have to be performed by training department management. Essentially, this process will have to be marketed to senior management.

This can be made less difficult, given the typical senior management perception of the training function, by first reporting the results of the prospective aspect of the justification process. This report should be formal, written in language that does not use specific HRD terminology, and should stress a profit orientation. This will hopefully attract the interest of senior management. This should then be followed up by the results of the retrospective analysis when they become available. Again, the results should be presented formally.

Graphical Representation of the Framework

A graphical representation of the steps in phase 2 is presented in Appendix 1. Effectively phase 2 is a decision algorithm that can be used by inexperienced HRD practitioners as an aid in applying economic justification to training efforts.

Stressing, once again, that the process of economic justification is one that underlies the training process, the algorithm begins with the problem identification stage. The first step is always to initiate project cost tracking. The next step is a decision point where a determination must be made as to whether the training program is mandatory. If so, there is no need to attempt to measure the benefits associated with its implementation because the program must be carried out whether or not it is economically feasible. However, the costs of the program must be tracked and

analyzed for effectiveness and efficiency and a report to management must be generated.

If the training program is not mandatory then a determination must be made as to whether or not the training program involves management training. If management training is involved then a decision must be made as to whether or not the benefits associated with the program can be estimated and expressed in monetary terms. If not, then management training is treated in the same way as mandatory training. If the benefits of management training can be estimated and expressed in monetary terms then it is treated in the same manner as non-management training.

The next step is to estimate the cost of the training solution. This leads to another decision point where it must be determined whether or not the estimated solution costs are material. If the estimated costs are not material then project cost tracking is initiated, costs analyzed for efficiency and effectiveness and a report is made to senior management.

When the costs of a project are deemed material the next step is to estimate the potential monetary benefits accruing to the decision to implement the training program. Using these estimated benefits as a bench-mark alternative training solutions to the identified problem can be generated. Cost estimates must then be made for each of the alternative solutions which should then be compared to the

estimated benefits previously calculated. If the costs of all the alternatives exceed the estimated benefits then the process terminates and a report to management is generated. If this is not thee case then the alternative with the highest ROI is selected and subsequently implemented. The costs involved in the implementation of the program are tracked, analyzed for efficiency and effectiveness. The actual benefits accruing to the program should be measured and finally the results should be reported to management.

Strengths and Weaknesses of the Framework

Strengths

The obvious strength of the framework is that it provides a step by step approach that can be followed by HRD practitioners who are unfamiliar with the process of economic justification.

Additionally the framework has been developed in a way that should help to minimize wasted efforts. Proper determination regarding mandatory training and cost materiality should ensure HRD practitioners efforts in economic justification are directed towards projects that warrant it.

Finally, when the framework is followed the termination point is always a report to management. Ultimately, the rationale behind developing the framework was to create an awareness on the part of senior management of the value of

the training function to an organization. Irrespective of the ability of the training department to contribute to organizational profit, unless management is informed, little change can be expected.

Weaknesses

The most obvious weakness of the framework is its inability to deal adequately with management training. Determining the monetary benefits of, and providing a rationale for accruing changes in organizational profit to, management training is a major difficulty. Further research is necessary before this problem can be properly addressed.

A second weakness it that the framework does not teach HRD practitioners the required basic skills in accounting and finance necessary to implement the various stages of the framework. HRD practitioners will have to acquire these skills on their own.

Chapter 8

Conclusion

The literature reviewed during the course of this thesis covers a period of twenty-five years. For twenty-five years the professional training literature has indicated that a lack of economic justification, and in particular, the inability of the training function to present itself as a contributor to profit (as opposed to an expense) has had a dramatic, negative impact on the training function, and on the HRD staff who are part of it. The few instances where the economic justification of training efforts has been conducted have been in companies that have the most prestigious training departments in North America.

McLagan (1989) lists thirteen future forces affecting HRD work and competencies. These forces were determined by a study conducted by the American Society for Training and Development. To be included on the list a force had to be considered critical by at least fifty percent of the respondents to the study's questionnaire (questionnaires were sent to eight hundred experts in the HRD field). The second force listed was "increased pressure to demonstrate the value, impact , quality and practicality of HRD services" (p. 13). It should be noted that the word value was in boldface.

The framework for applying cost-benefit analysis to the training function presented in this thesis can help HRD professionals to meet this challenge. The framework, as

stated, is crude. It represents a first attempt at redefining the training process and the role of HRD staff in light of the importance of justifying the training function to senior management.

Further research is necessary to improve the framework. First, techniques need to be developed that will allow the currently intangible benefits of training to be expressed in monetary terms. This is especially true in the case of management training. Second, strategies need to be developed that can help deal with the ownership dilemma. Specifically, how can changes in gross measures such as net income or total sales be traced to the results of training programs. Third, the useful life of training programs needs to be investigated. In order to accurately assess the benefits of training programs it is necessary to estimate the span of time for which the training will continue to have an impact.

In addition to research, HRD practitioner bodies such as NSPI and ASTD need to lobby the governing accounting authorities for the recognition of some form of Human Resource Asset Accounting. Once adopted, this will allow training costs to be capitalized and to be recognized as an asset formally, on corporate balance sheets. From an accounting perspective, this would serve to make training expenditures more attractive.

Finally, it is imperative that the HRD practitioners

who will be implementing economic justification techniques do so with enthusiasm rather than reluctance. This should not be viewed as yet another task that they are required to perform but as an opportunity to prove the value they perform to the organization for which they work. It is important to realize that the first attempts at applying the framework will be difficult and frustrating. In addition, figures obtained in initial attempts at economic justification will most likely be inaccurate. The skills involved in the justification process will take time to develop and hone. Once mastered however, the HRD practitioner will be in a position to demonstrate to senior management and to the organization as a whole, the value, in monetary terms, of the contribution of the training department to the success of the organization.

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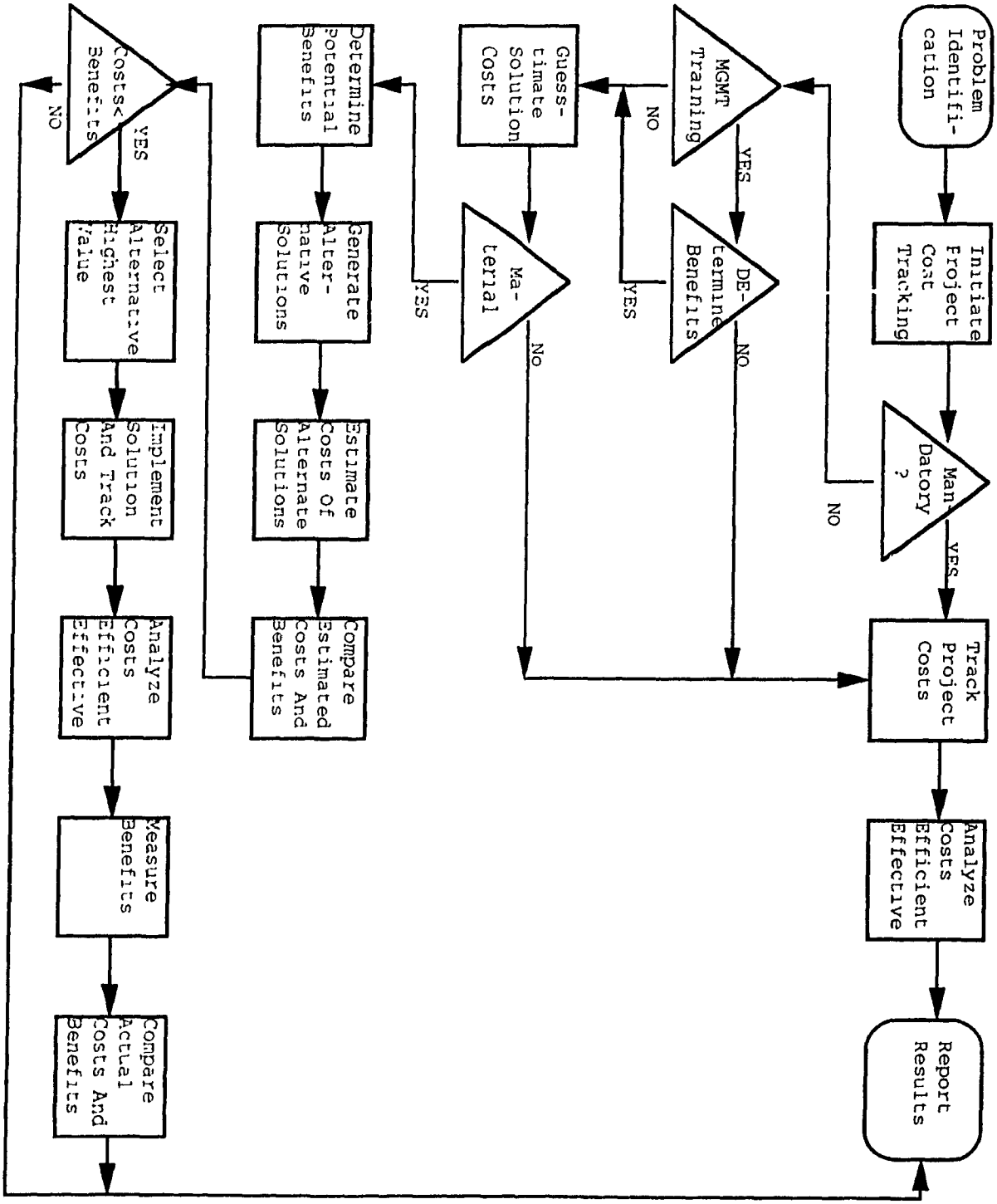
Appendix 1


Problem Identifi-cation
Initiate Project Cost Tracking
Mandatory ?
YES
NO
Track Project Costs
Analyze Costs Efficient Effective
Report Results
MGMT Training
YES
NO
DE-termine Benefits
YES
NO
Guess-timate Solution Costs
Ma-terial
YES
No
Determine Potential Benefits
Generate Alter-native Solutions
Estimate Costs Of Alternate Solutions
Compare Estimated Costs And Benefits
Costs< Benefits
YES
NO
Select Alternative Highest Value
Implement Solution And Track Costs
Analyze Costs Efficient Effective
Measure Benefits
Compare Actual Costs And Benefits