5-1975

Human Resource Accounting: Premise, Expeirimentation, Evaluation

George Sanderson

HUMAN RESOURCE ACCOUNTING: PREMISE, EXPERIMENTATION, EVALUATION

by

George N. Sanderson

Bachelor of Science, University of North Dakota, 1968

An Independent Study

Submitted to the Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota

May
1975

TABLE OF CONTENTS

INTRODUCTION

The Committee on Human Resource Accounting of the American Accounting Association has formulated the following definition of Human Resource Accounting: "Human Resource Accounting is the process of identifying and measuring data about human resources and communicating this information to interested parties."[1] The avowed purpose of such measurement is to improve the quality of financial decisions made internally and externally.

The purposes of this independent study are: 1) to examine some of the arguments, both for and against Human Resource Accounting, 2) to observe some of the techniques used in attempts to implement Human Resource Accounting, and 3) to draw some conclusion about the status of this new informational field.

Although relatively new, this topic has generated considerable interdisciplinary interest. Accountants, economists, behavioral scientists, and others have expressed their views and written of their findings concerning the issues at hand. This study will concern itself primarily with how accountants view Human Resource Accounting and will tend to ignore interdisciplinary aspects except where some mention is required to support a point.

---

[1] "Report of the Committee on Human Resource Accounting," Committee Reports (Supplement to Volume 48 of The Accounting Review), American Accounting Association, 1973, p. 169.

The Premise

Most authors on the subject of Human Resource Accounting (hereafter referred to as HRA) give credit for the major impetus behind the movement to capitalize investments in humans to Rensis Likert. Likert was a college professor who was engaged in a study of the continuum of management styles. He viewed such styles as falling into one of four classes or systems ranging from "exploitive-authoritarian" on the one end to "participative" on the other.[1]

Likert firmly believed in the superiority of the participative style, and in an attempt to discover the reasons for its infrequent use he became convinced that some traditional accounting practices, such as expensing all outlays for human resource development, were inherently biased in favor of the more authoritarian approach.[2] The reasoning is clear. Why should a manager who is being evaluated on the basis of short-term dollar profits seek to reduce such profits by incurring expenses for personnel development costs? Why shouldn't a manager find himself in the situation of having to exert undue pressures on his employees to improve output and thus increase short-run profits? Conventional accounting treatment would tend to indicate each of the above

---

[1] Edwin Caplan and Stephen Landekich, Human Resource Accounting: Past, Present and Future (New York: National Association of Accountants, 1974) p. 49.

[2] Ibid., p. 51.

managers had performed admirably, but the long-run effects of less training and decreased morale might indicate otherwise. Thus, accountants' preoccupation with end-result variables, such as costs and profits, while ignoring the causal and intervening variables, such as employee attitudes and morale, may assist managers in making erroneous decisions.[3]

To remedy this deficiency Likert proposed that some means of quantifying the worth of human assets be developed so that a measure of the effect of depleting human resources could be made. Such a measurement would tend to emphasize the long-run effect of management's use of people and would also help to mitigate the tendency of managers to emphasize only short-run profits. This latter effect would, of course, require that the management system give rewards for long-run effects on profits. The procedure would be to measure the value of the human assets at the beginning and end of the period and try to determine just how much of the short-term profit was made at the cost of wasting human resources.

Economists were quick to join in the plea to accountants for some form of HRA, and several of their arguments were convincing. They argued, for example, that there was abundant evidence of substantial earnings and productivity differentials among persons with varying amounts of education and training, with those persons most highly trained and educated generally falling into the higher earnings and productivity categories. Thus, they reasoned that expenditures for such personal development should be capitalized as investments in humans, for future

---

[3] Marvin Weiss, "Human Resource Accounting - A Neglected Area", CPA Journal 42 (September 1972), p. 736.

benefits are certain to accrue. They also pointed out that the services of labor account for approximately four-fifths of the annual output of the entire U.S. economy and that much more emphasis should be placed on this huge and vital resource in financial reporting.[4] Add to these points the fact that the humans are the active ingredients of the economic processes--that without humans, businesses could not employ any of their financial or physical resources in any productive manner--and the economists established a substantial basis for their beliefs. At least one accountant has written, "Accountants could take a lesson in this regard from economists, who have long recognized personnel as a form of capital on the same level as investment in tangible equipment."[5]

Management experts, behavioral scientists and organization theorists also joined in the dialogue. Many became convinced, as did Likert, that current organization patterns and management styles of the day emphasized too much the management of physical and financial resources and too little the management and development of people. The very process of management, they maintained, should be defined as the task of developing people.[6] Perhaps some of these people blamed the accountants for not providing managers with proper information required to adequately manage human resources, but whether blame was placed or not, it became clear that many felt that it was up to the accounting profession to take the initiative of developing a HRA system and implementing it for the benefit of financial information users.

---

[4] Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 11.

[5] Weiss, "Human Resource Accounting - A Neglected Area", p. 736.

[6] Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 35.

And so it developed that pressure was brought to bear on the accounting profession to develop HRA. But before any system could be developed some critical questions had to be answered. For example:

1. Should such information be used only internally or both internally and externally?

2. If used externally, could HRA information be handled in accordance with current generally accepted accounting principles?

3. If the answer to question number two is "No", what changes must be made in generally accepted accounting principles to permit such treatment?

4. Is it possible to develop a theoretically sound, feasible model to implement in the real world situation?

The above questions are not an exhaustive list, but they do illustrate the basic nature of the HRA problem. To illustrate, question number one deals with the internal-external reporting decision. If a HRA system is designed solely for the benefit of managers, then the tools and techniques employed will not be shackled by the handcuffs of generally accepted accounting principles. But once the decision is made to incorporate such information in external reports, restrictions begin to set in.

Whether one believes such external reports should be made depends generally on whether one believes the user will benefit from such information. Accountants are generally split on this issue in regards to HRA. Some authors, such as Brummet, Flamholtz, and Pyle, maintain that HRA is meant to be a management tool--it need not be constrained by accounting conventions, legal restrictions or tax laws.[7] These three pioneers in the field obviously felt that external users would not benefit. Actually,

---

[7] R. Lee Brummet, Eric G. Flamholtz, William C. Pyle, "Human Resource Measurement - A Challenge for Accountants", The Accounting Review 43 (April 1968), p. 224.

very little research has been done in the area of determining the effect on external users of including human resource information in financial statements. One such study did tend to indicate that external users did not benefit, but the experimental results were considered inconclusive.[8]

Brummet and his compatriots suggested several ways in which HRA could be of use internally. Among them were:[9]

1. Use of a human asset investment ratio, defined as the ratio of human to total assets, as a projector of ability to generate high profits.

2. Analysis of personnel turnover costs to determine if human assets are being depleted to increase earnings.

3. Adjustment of net income to reflect the change in the value of human assets could improve income projections.

4. The availability of human resource value data will make managers constantly aware of human resource value in the search for alternative solutions to problems.

5. Quantification of human resource data will improve capital budgeting decisions where only qualitative human resource data is now used.

6. HRA will help to establish standard costs in such areas as recruitment, training, and development.

7. HRA could be used to establish replacement costs to assist in budgeting investments in manpower planning and development.

Two of the above mentioned authors have written separately of their own personal views on the importance of HRA to management. In December 1970, Brummet wrote, "Relevant information on human resource condition and change could improve substantially the congruence of managers' de-

---

[8] Nabil Elias, "The Effects of Human Asset Statements on the Investment Decision - An Experiment", Empirical Research in Accounting: Selected Studies, 1972, p. 44.

[9] Brummet et al, "Human Resource Measurement - A Challenge for Accountants", p. 219.

cisions and organizational objectives."[10] Flamholtz just four months later proposed, "...failure to account for its human resources can have several adverse consequences on overall organizational effectiveness as well as on the effectiveness of human resource management itself."[11]

But this restricted view of HRA as solely a management tool is not universally accepted. In fact, although HRA was envisioned as such a tool initially, the trend of thought seems to have been toward the more liberal use of HRA in both internal and external contexts. Some early champions of external use have gathered substantial support from current individual writers and also from the American Accounting Association's Committee on this subject.

In response to the Brummet, Flamholtz, and Pyle article noted previously, Baruch Lev and Aba Schwartz proposed their own HRA model, and at the same time tried to score some points for the use of human capital information in published financial statements. Lev and Schwartz argued that external users such as stockholders, creditors, potential investors, union leaders, and others including society in general, have an interest in, and could benefit from, quantified information regarding the value of the human organization. Specifically, these two proposed the following benefits to outside users:[12]

1. A new set of financial ratios would become available. For example, the ratio of human capital to non-human capital would

---

[10] R. Lee Brummet, "Accounting for Human Resources", Journal of Accountancy 130 (December 1970), p. 62.

[11] Eric G. Flamholtz, "A Model for Human Resource Valuation: A Stochastic Process with Service Rewards", The Accounting Review 56 (April 1971), p. 253.

[12] Baruch Lev and Aba Schwartz, "On the Use of the Economic Concept of Human Capital in Financial Statements", The Accounting Review 56 (January 1971), p. 107.

measure the labor intensiveness of a firm and could possibly be used as a projector of future income.

2. It could provide monetary information about the changes in the structure of the firm's labor force, e.g. trying to measure the dollar effect of an "aging firm."

3. By differentiating between the general value (based on U.S. census figures) and the special value (based on the firm's own wage scales) of its human resources, users could determine if firm management was using cheap, low quality labor. Theoretically, the effect here is to reduce current expenses thus raising short-term profits--at the expense of training and developing personnel so as to generate profits in the long-term.

Recently, the Committee on Human Resource Accounting of the American Accounting Association made a policy statement to the effect that the members believe that the internal reporting objective is too narrow, and that HRA should be developed to help external users.[13] Even Flamholtz, staunch proponent of internal use only in his early days in the field, has mellowed a bit in this regard of late. In expounding on the potential benefits of HRA he suggests that HRA may facilitate social controls, an obvious reference to use by outsiders to judge the effectiveness of management in developing humans. For example, a firm engaged in hiring and developing the so-called "hard core unemployed" might find its social contribution measured by the observed increase in the value of these underdeveloped human beings.[14]

Still, many practicing accountants remain unconvinced when it comes to external reporting of HRA information. The problems of reporting such data in accordance with current generally accepted accounting principles are enormous, and the state of the art has not progressed to the point

---

[13] "Report of the Committee on Human Resource Accounting", Committee Reports (Supplement to Volume 48 of The Accounting Review), American Accounting Association, 1973, p. 170.

[14] Eric Flamholtz, "Toward a Theory of Human Resource Value in Formal Organizations", The Accounting Review 47 (October 1972), p. 677.

where these problems can be resolved. Even Weiss, for example, a vigorous advocate of HRA development and implementation freely admits that attempts to place values on human assets on external financial statements is still outside the realm of generally accepted accounting principles.[15] Brummet reenforces the same point, "The potential for HRA internally and externally is significant--yet the problems of public reporting a) comparability, b) consistency, c) conservatism, and d) objectivity, present very potent roadblocks."[16]

Much of this opposition to external reporting comes from accountants who are firmly convinced that human resources simply do not fit the current definition of an asset and therefore should not be reported as such. Assets are "economic resources of an enterprise that are recognized and measured in conformity with generally accepted accounting principles."[17] For many years the above definition has carried with it the implication that ownership of a resource was required before asset status could be claimed. Newell, in calling for a change in the definition of assets, points out by way of illustrations just how strong this traditional ownership view has been:[18]

1. From Canning, 1929, "An asset is any future service in money or any future service convertible to money . . . the future beneficial interest in which is legally or equitably secured to some person or set of persons."

---

[15] Weiss, "Human Resource Accounting - A Neglected Area", p. 737.

[16] R. Lee Brummet, "Accounting for Human Resources", Journal of Accountancy 130 (December 1970), p. 66.

[17] "Statement Number 4 of the Accounting Principles Board", APB Accounting Principles, Current Text, Volume One (Chicago: Commerce Clearing House, 1973), p. 257.

[18] Gale E. Newell, "Should Humans Be Reported As Assets?", Management Accounting 54 (December 1972), p. 15.

2. Sprouse and Moonwitz, Accounting Research Study Number 3, "Assets represent expected future economic benefits, rights to which have been acquired by the enterprise as a result of some current or past transaction."

3. Chambers, "An asset is any severable means in the possession of an entity."

Nearly every opponent of HRA mentions this problem of legal ownership. In a free society such as ours it is extremely difficult to consider people as assets because there can be no legal ownership. Perhaps the one exception to this rule is the professional sports industry where an athlete is for all practical purposes "owned" by the franchise which has his contract. Backers of HRA maintain that this defense of the status quo based on policy of "no ownership - no asset" is very weak and has already been ignored in at least one area, that being the capitalization of leases by the lessee in cases where the lessee is not the legal owner.

With regards to HRA, models which are developed to account for the values of individuals, as opposed to the work force as a whole, might have to struggle with this ownership problem, since an individual worker cannot be owned. But the Lev-Schwartz model for HRA is based on determining the value of work force as a whole and this, the authors reason, would nullify the ownership problem. Such a plan, say its designers, is not concerned with the lack of ownership of individuals, since the work force as a whole is "constructively" owned. Although individual workers might be added to the force while others are terminated, the work force will not radically change over the short term.[19]

However, even if the ownership problem can be sidestepped, other

---

[19] Lev and Schwartz, "On the Use of the Economic Concept of Human Capital in Financial Statements", p. 109

problems exist. Another factor in the asset-versus-expense decision is the notion of future service potential and its effect on the matching principle. Some items are capitalized in the period of expenditure because there is a reasonable expectation that the expenditure will result in benefits to future periods, and those benefits can be adequately estimated. On the other hand, other outlays are completely expensed in the transaction period because either 1) there is no benefit to future periods expected, or 2) any such benefit is not subject to reasonable estimation. Applying these ideas to expenditures for recruiting, hiring, training, and developing of personnel raises some extremely difficult questions, among them:

1. What is the amount of the future benefit of these costs?
2. What is the length of time over which these costs should be amortized or charged to expense?

The various HRA models which have been proposed have each attempted to answer these questions, and the experiments conducted by some firms with HRA have dealt with them in various ways. Still, no clear answer has emerged, and this probably accounts for the fact that accountants still follow the practice that Brummet, Flamholtz, and Pyle commented on in 1968 of treating "all expenditures made for the purpose of investing in human resources as charges to income without considering the timing of expected benefits."[20]

Newell favors HRA in general, but he disagrees with those model-builders who design systems which circumvent current generally accepted accounting principles by making exceptions for the treatment of human resources. "A much more scholarly and effective approach would be to develop a

---

[20] Brummet et al, "Human Resource Accounting - A Challenge for Accountants," p. 217.

definition or model of what is an asset, convince the profession of its propriety, and use the model to determine what should be recorded as an asset."[21] He suggests that the collective reputations of accountants have long been based on their reporting of objective, verifiable data, and that any relaxation of this objective for the sake of a presumed improvement in relevance must be subject to close scrutiny. Newell's portrayal of the traditional asset determination model and his proposals for asset determination models to record human resources at cost or at economic value are presented as Exhibits 1, 2, and 3 in Appendix A to this study.

Having thus touched on the first three questions posed on page five of this study, let us now turn our attention to the fourth. Is it possible to develop a theoretically sound, feasible model to implement in the real world situation? Several HRA models have been proposed, ranging from the relatively simple method of capitalizing such human resource acquisition costs as recruiting, hiring, and training, to a far more complex process involving statistical analysis of causal and intervening variables to predict future earnings. In this latter case the discounted future earnings would provide a measure of the present value of the human resources of a firm.

The basic cost-value dilemma exists as much in the HRA problem as it does in the treatment of tangible assets. Historical costs are required to be used for financial statement purposes, but they fail often times to provide relevant information for decision-making, both for management and for external users. For many decisions the relevant data must reflect current or future economic value, as opposed to historical

---

[21] Newell, "Should Humans Be Reported as Assets?" p. 13.

costs. Value measures, on the other hand, are generally viewed by accountants as lacking objectivity and being difficult to obtain reliably. However, this cost-value dilemma must be resolved someday for all classes of assets, not just human ones, and until that happens it appears obvious that a complete human resource accounting system will require multiple measurements.

Three distinct approaches to this measurement problem are discernible, namely: cost measurement, value measurement, and behavioral measurement. Caplan and Landekich, in their research for the National Association of Accountants Committee on Research, revealed that there are two main types of cost methods other than historical costs, those based on replacement cost and those based on opportunity cost.[22] Either of these two latter methods could be viewed as an approximation of economic value. Various methods of establishing replacement costs have been observed and include:[23]

1. Base replacement costs on accumulated historical costs of recruiting, training, familiarization, etc.
2. Use management estimates of the costs to replace an individual or group. (These estimates usually run from three to five times the annual salary.)
3. Use estimates based on cost conditions existing inside the firm.
4. Collecting information concerning the "going rate" outside the firm for persons with similar capabilities and experience.

Concerning these replacement cost values the Committee has said they are generally useful for manpower planning and control and for developing valid and reliable surrogate measures of the value of people to

---

[22] Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 74.

[23] Ibid., p. 74.

the organization, but they may be deficient when the company is unwilling or unable to find a similar replacement for an existing asset.[24]

To remedy this supposed defect, Hekimian and Jones proposed a concept involving opportunity costs. The basic idea was to determine opportunity cost values through a bidding process.[25] Investment center managers would be encouraged to bid for any scarce employees they desired. Non-scarce employees have no value here and are not included in the system. The winning manager would be entitled to include profits generated by the employee in his center's income and would be required to include the bid price in his investment base.

Unfortunately for Hekimian and Jones their model had some serious defects and has generally been regarded as inadequate and unworkable. Gilbert points out that this model makes serious omissions of certain asset values, such as employees of the type that can be readily obtained from the outside.[26] Since these assets are not regarded as scarce they are not subject to bid or included in the asset base of an investment center. By thus ignoring the value of ordinary personnel and emphasizing the value of those with special capabilities in great demand, one will arrive eventually at a state of neither expecting or planning for development or growth in the value of ordinary employees. As others have pointed out, this approach would by design be a direct violation of the basic premise of HRA, which maintains that employees in general are assets.[27]

---

[24] "Report of the Committee on Human Resource Accounting," 1973, p. 171.

[25] Roger Jauch and Michael Skigen, "Human Resource Accounting: A Critical Evaluation", Management Accounting 55 (May 1974), p. 35.

[26] Michael H. Gilbert, "The Asset Value of the Human Organization", Management Accounting 52 (July 1970) p. 26.

[27] Jauch and Skigen, "Human Resource Accounting, A Critical Evaluation",p.35.

The behavioral measurement approach was suggested by Likert. It would involve procedures whereby periodic measurements would be made of key causal and intervening variables for the firm as a whole or for any investment center for which productivity, costs, waste, and earnings could be computed. Provided statistical analysis could be made of variations in leadership styles, technical proficiency levels, supervisory levels, and organization structure (causal variables), and the resulting changes in subordinate attitudes, motivation, and behavior (intervening variables), and these changes affect the end result variables such as productivity innovation, and human resource development--then, Likert says, trends in future earnings can be predicted.[28] These forecast future earnings would be discounted to find the present value of the human resources of the unit under evaluation.

Although Newell thought this model had merit in that it would focus management attention on key human variables of the organization, there are two readily apparent drawbacks. The first is that there is insufficient statistical data available on the relationship between causal, intervening, and end result variables and such data would be difficult and costly to obtain. The second is that the system is very complex and it is doubtful that accurate forecasts could be regularly made since the statistical relationship may be subject to change.

Finally, there are the value measurement models. These models attempt to establish the value of the firm's human resources on the basis of the benefits which will accrue to the firm from the investments made in such human resources. The methods differ in approach. Some attempt to calculate the investment in an individual, others in a group of indi-

---

[28] Gilbert, "The Asset Value of the Human Organization", p. 27.

viduals, and still others in the entire work force of a firm.

In 1964, Roger Hermanson became the first accountant to publish a major work on HRA.[29] He argued, as did many to follow, that traditional accounting practices presented users with misleading information because they ignored the effect of what he called "operational assets"--i.e., assets not legally owned but which benefited the firm. Excess earnings, he argued, result from human resources and should be attributable to them. Thus he proposed that the excess of profits over the normal for the economy as a whole be capitalized at the normal rate of return. Note the illustration which follows:[30]

Average value of owned assets	$100,000
Actual after tax net income	15,000
Rate of return owned assets	15%
Net income at normal rate of 10%	$ 10,000
Excess of actual over normal income	5,000
Value of human assets capitalized at 10% ($5,000 ÷ .10)	$50,000

To record this unpurchased goodwill, Hermanson proposed the following sample entry:

Operational Assets	$50,000	
Equity Increase - Superior Earning Power on Owned Assets		$50,000

If the company's actual return fell below the normal rate a decrease in equity would be required. At the end of each year, the previous year's entry would be reversed and a new entry made.

Hermanson alternatively proposed an adjusted present value method.[31] This would basically involve: 1) determining the next five years' wage

---

[29] Caplan and Landekich, Human Resource Accounting: Past, Present, and Future, p. 78.

[30] Ibid., p. 79.

[31] Newell, "The Asset Value of the Human Organization", p. 27.

payments and discounting them at the rate of return on owned assets in the economy for the most recent year, 2) calculating an average efficiency ratio by dividing actual earnings of the firm by normal earnings and weighting the more recent years heaviest, and 3) multiplying the present value of the wage payments by the ratio obtained in 2 to determine the present value of human resources. For example, where the ratio was 1.2 and the present value of the wages was $200,000, a journal entry to reflect the human resource value could be:

Human Resources	$240,000	
Future Wages Payable		$200,000
Excess Worth--From Relatively Efficient Human Resources		40,000

Newell points out a major drawback in this latter approach. To be effective it must be accepted across the board by the accounting profession if it is to function properly. Otherwise firms adopting this plan will show a lower return on investment than similar firms who do not include human resources in the investment base. This may cause financial resources to flow to less efficient firms, thereby destroying the incentive for more efficient utilization of resources.[32]

Lev and Schwartz advocate a value model which would be used to provide both internal and external financial information.[33] They maintain that the value of a singular human of age T is the present value of his future earnings from employment. By segregating and classifying persons by age, education, and skill, and by applying statistical inputs from such sources as the U.S. Census, mortality tables, and industry data, it should be possible to determine the value of human capital with some

---

[32] Ibid., p. 27.

[33] Lev and Schwartz, "On the Use of the Economic Concept of Human Capital in Financial Statements", p. 105.

degree of accuracy. For the firm the steps would include:[34] 1) segregating employees into homogeneous groups, 2) valuing each group, 3) summing the groups to find the firm's human resource value. The discount rate used in the present value computations would be the firm's cost of capital.

This model also proves deficient in some areas, and in January 1972 Eric Flamholtz chided its two co-authors for failing to consider the possibility of early exit from the firm, as in the case of pre-death termination or retirement.[35]

What is considered by many to be the most complex and most theoretically correct value model has been developed by Flamholtz. Named "expected realizable value", this model postulates that an individual is not of value to the organization in the abstract, but is of value to an organization only in relation to his own attitudes and attributes, the type and characteristics of the organization, and the nature of his role therein.[36] Flamholtz centers his value measures around the individual for two reasons: 1) individuals are the most frequent center of management attention, and 2) information on individuals can be aggregated to formulate a value for the entire work force.[37] The basic interrelationships which Flamholtz envisions as determining this expected realizable value are illustrated in Exhibit 4 of Appendix A to this study.

---

[34] Ibid., p. 106.

[35] Eric G. Flamholtz, "On the Use of the Economic Concept of Human Capital in Financial Statements, A Comment", The Accounting Review 47 (January 1972), p. 149.

[36] Caplan and Landekich, Human Resource Accounting: Past, Present, and Future, p. 83.

[37] Flamholtz, "A Model for Human Resource Valuation: A Stochastic Process with Service Rewards", p. 255.

Flamholtz's model does not possess the theoretical deficiencies that other value models do. But even Flamholtz himself freely admits it would be difficult to apply in the real world, primarily because of the uncertainties with respect to employee output, position and termination. So he goes on to propose that other surrogate or substitute measures of human resource value be used, and as alternatives he suggests several of the other methods discussed previously in this paper, among them: acquisition cost, replacement cost, current or open market cost, compensation, and performance measures.

Finally we should consider the general problem of feasibility. Jaggi and Lau suggest that for a model to be useful it must meet three basic standards:[38]

1. It must provide relevant information to decision makers.
2. It must meet operational capabilities--i.e., the raw data must be available.
3. It must include the pertinent variables relating to the problem.

Generally, the value models provide the most relevant information but fall short of meeting the operational capabilities. Cost models fit the operational capabilities but may not provide relevant information for managerial decisions. Thus, either a multi-valuation approach should be used, or management must decide on appropriate trade-offs and select the model which best fulfills their particular needs. Some approaches to these problems are illustrated in the following chapter.

---

[38] Bikki Jaggi and Hon-Shiang Lau, "Toward a Model for Human Resource Valuation", The Accounting Review 49 (April 1974) p. 321.

Experimentation

There have been at least four major attempts to implement some form of HRA in business. By far the most extensive HRA operation has been developed at the R.G. Barry Corporation in Ohio, but other noteworthy experiments have been conducted by the Montreal office of Touche Ross & Company, by American Telephone and Telegraph, and by the CPA firm of Lester Witte & Company. Each of these experiments has involved a different approach to the problem, and this chapter will attempt to present these approaches.

In addition to these major experiments, several companies have made limited attempts to quantify human resource data in various ways so as to aid managers in decision-making, and other related research has been conducted regarding the behavioral impact of the use of HRA information. For example, as noted in the preceding chapter, Elias reported that although some investors used human resource data provided them on financial statements, others chose simply to ignore it. Thus he concluded that the effects of external reporting were uncertain and the study inconclusive.

Dermer and Siegal have reported the results of an experiment conducted with sixty-five MBA students at the University of Toronto.[1] As a result of the experiment these two authors concluded:

1. Accountants should not look to behavioral features of an organization to determine human resource value to use in an accounting system.

---

[1] Jerry Dermer, Jacob Siegal, "The Role of Behavioral Measures in Accounting for Human Resources", The Accounting Review 49 (January 1974), p. 95.

2. Information based on behavioral factors such as attitudes and satisfaction may increase dysfunctional decision-making and therefore worsen attempts at achieving goal congruence.

If the results of this experiment are valid in true business situations, great doubts are cast on the workability of Likert's behavioral measures approach to HRA discussed previously.

These minor experiments present interesting sidelights to the major research, which according to Brummet, Flamholtz, and Pyle, has three broad objectives;[2]

1. The development of human resource accounting systems in a number of corporations.
2. The formulation of a body of generalizations about the ways in which information provided by a HRA system should be used in planning and control within a firm.
3. A set of generalizations about the behavioral impact of a HRA system on people.

Against a background of these objectives, the three men mentioned above became involved in 1966 with R.G. Barry Corporation in an attempt to develop and implement the first HRA system. Barry Corporation was an apparel and footwear manufacturer. Such firms typically have low capital investments per employee, which causes the value of human resources to be readily apparent to management.[3] At Barry this recognition of the worth of human assets led to changes in the basic business objectives and policies to the extent of establishing a new business purpose of "creating a climate that stimulates, challenges and channels human intelligence, ingenuity and desire to our Associates (employees) to the fulfillment of our purpose and to provide them with a sense of achievement, equitable

---

[2] Brummet et al, "Human Resource Measurement - A Challenge for Accountants", p. 221.

[3] Robert L. Woodruff, Jr., "Human Resource Accounting", Canadian Chartered Accountant 97 (September 1970), p. 156.

compensation, plus participation in the results of success."[4] Barry officials soon realized their conventional accounting procedures were inadequate. Two separate attempts to install formal performance evaluation systems had failed, primarily because the accounting system provided no information bearing directly on the organization's human assets. Barry then contacted Likert for assistance in developing a HRA system, and Brummet, Flamholtz and Pyle were assigned to the development team.

Barry's primary objective was to develop a usable system that would provide relevant information on human resources and which would integrate with the conventional accounting system. A multi-measurement approach involving outlay costs, replacement costs, and economic values was planned from the beginning to be ultimately used,[5] but the historical outlay costs were the first to be implemented when the project began on January 1, 1968. Cost data concerning ninety-five managers was accumulated in seven functional capital accounts:

1. Recruiting outlay costs
2. Acquisition costs
3. Formal training
4. Informal training
5. Familiarization costs
6. Investment building experience costs
7. Development costs

By 1970 the system had been expanded to include all managers at all locations and 800 other employees. By the end of 1971 all employees were included, although cost outlay data on non-managerial employees was broken down into only three sub-areas: acquisition, orientation, and training.[6]

---

[4] Ibid.

[5] Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 89.

[6] Woodruff, "Human Resource Accounting", p. 158.

Human resource account balances are amortized annually based on the expected working life of the employee, or over a shorter period if circumstances warrant. Total write-offs occur as employees terminate. Managers receive quarterly reports on the human assets in their responsibility area. In 1969 and 1970 pro forma balance sheets and income statements were prepared to reflect the HRA data. For example, the 1969 income statement reflected a net increase in human resource investments of about $173,000, and the 1969 balance sheet reflected a net investment in human resources of nearly $1,000,000.[7]

In 1970 the country experienced an economic turndown, and R.G. Barry was no exception. Conventional personnel turnover statistics indicated that Barry would suffer the least from a substantial layoff of personnel. However, in working with HRA information the development team formulated a new method of evaluating the effects of layoffs and the subsequent turnover. Named the "monetary turnover index", this method involves dividing the sum of 1) the investment bases of persons terminating plus 2) the investment required to replace these persons by the sum of the total human resource investment at the beginning and the end of the period.[8] Using this new quantitative analysis made possible by the accumulation of human resource accounting data, a decision was made to substantially reduce the size of the lay-off.[9]

Other developments in the R.G. Barry experiment include:

1. Use of standard replacement costs, updated for inflation and

---

[7] Ibid., p. 159.

[8] Robert L. Woodruff, "Measuring Staff Turnover", Canadian Chartered Accountant 102 (February 1973), p. 38.

[9] Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 106.

other factors, to establish an employee's beginning balance.

2. Use of human resource data in annual budgeting for human resources.

3. Continued use of pro forma financial statements revealing HRA data.

4. Accumulation of behavior measurements since 1968 in an attempt to eventually integrate behavioral measurements into value analysis.

5. Continued work on the development of an economic value model to provide even more relevant data for decision-makers.

Illustrations of some of the important documents and statements prepared at R.G. Barry appear as Exhibits 1-6 in Appendix B.

At the Montreal office of Touche Ross & Company there developed an idea that a public accounting firm is by its very nature human resource intensive, and "represents an ideal proving ground for the application of HRA concepts."[10] And indeed, the primary assets of a public accounting firm are its clients and the capabilities of its people. Thus, it can be logically reasoned, the prospects for long-term survival of a public accounting firm are enhanced by its efforts to develop its human resources. But reasonable and orderly development requires that managers have information on 1) turnover costs, 2) the effectiveness of hiring and training, 3) the adequacy of the professional mix, and 4) measures of human performance. The Touche Ross partner-in-charge of this HRA project, Michael Alexander, maintains that all of the above information can be provided by an effective HRA system.

The traditional yardstick of performance in a CPA firm is chargeable hours, but this restrictive view may very well discourage necessary and beneficial investments in human resources. At Touche Ross the HRA

---

[10] Michael Alexander, "Investments in People", Canadian Chartered Accountant 99 (February 1971) p. 39.

approach is to calculate the investment in each employee on the combined basis of cash outlay costs and opportunity costs. Amortization here, as at Barry, is over the expected useful life of the employee or shorter if required. This employee investment cost is then in turn used to calculate the employee's contribution to profit and the cost of turnover. Finally, these human resource investments are related to operating results.

Some of the typical internal management reports generated at Touche Ross are illustrated in Exhibit 1 of Appendix C. The title, nature and use of each of these four reports is briefly as follows:[11]

1. Cost of Time Analysis Report (Figure 1) - This report indicates the value of planned and actual hours and resulting variances. Variances result from too many or too few personnel on staff and from having spent too much or too little time on assignments. The breakdown of times for recruiting, orientation, professional development, etc., assists managers in evaluating the human development of the firm.

2. Human Resource Investment (Figure 2) - This report compares the actual versus planned investments in people for a given period of time. Similar reports for the various staff levels give managers a good idea of the magnitude of investments made at each level.

3. Statement of Human Resource Flows (Figure 3) - This report shows in dollars and numbers of people the beginning investment and how the investment changed during the year. This report further emphasizes to management the need for constant resource development, especially when departure rates run high.

4. Contribution Report (Figure 4) - This report provides Touche Ross with a measure of profitability before overhead items are deducted.

Touche Ross is convinced that their HRA system has substantially improved their knowledge of the required personnel mix and the effects of its training and development program on profits. As a result, they are in a better position to manage these key public accounting firm

---

[11] Ibid., p. 100.

variables.

The HRA project at AT&T is under the direction of AT&T's Human Resource Laboratory. The project is entitled "Force-Loss Cost Analysis" and is designed to measure the costs of employing and developing toll directory and assistance operators.[12] This cost-data collection system treats employee replacement costs as capital investments rather than immediate expenses. Replacement costs are approximated by accumulating historical costs in four different cost categories, namely employment costs, training costs, efficiency recovery costs, and costs of extra supervision.

The employment and training cost categories are similar to those in other projects but the latter two categories require some explanation. Efficiency recovery costs are the portions of wages of newly trained operators for work that does meet the normal or expected productivity level. Costs of extra supervision are measured by the number of discussions required between the operator and a supervisor and consist of the supervisor's wages attributable to the period necessary to get operators up to normal productivity.[13]

Amortization of these investments is straight-line over the expected tenure of the employee. Adjustments are made regularly to the expected tenure figure. The amount amortized during tenure represents the recovery on the investment, and the unamortized balance becomes a loss on termination. At AT&T all this HRA information is used solely for management planning and control, and AT&T managers claim the efforts have resulted in making local offices more human resource cost-conscious.

The final major HRA experiment of which I have knowledge is being

---

[12] Thomas W. McRae, "Human Resource Accounting as a Management Tool", The Journal of Accountancy 138 (August 1974), p. 33.

[13] Ibid., p. 34.

conducted at Lester Witte and Company, a CPA firm. This case is especially noteworthy because of the attempt to establish a HRA system to measure human resource value as opposed to some form of human resource cost. The project began in 1971 under the direction of Professor Eric Flamholtz, and is to be an attempt to implement his proposed value model, "a stochastic model with service rewards", which was discussed briefly in chapter one.

Briefly, a stochastic process is a natural system that changes over time in accordance with the laws of probability.[14] Such a model may represent personnel movement through an organization, and as individuals occupy various positions or "service states" the organization can expect some future benefit or reward. A HRA system based on value would attempt to measure the present value of expected future benefits from time to time and determine the increase or decrease in the human resource value.

A firm wishing to measure human resource value in this manner must determine in some fashion[15] 1) a time period for evaluation, 2) a subjective estimate of the present value of earnings expected if a particular individual occupies a specified position for specified time, and 3) a probability that the individual will remain with the organization and occupy the specified positions.

At Witte the process of developing basic data involved five steps:[16]

1. Service states. This step involved identification and classification of all jobs within the firm.

---

[14] Flamholtz, "A Model for Human Resource Valuation: A Stochastic Process with Service Rewards", p. 149.

[15] Ibid., p. 152.

[16] Caplan & Landekich, Human Resource Accounting: Past, Present and Future, p. 115.

2. Economic values. This step involves attaching economic values (potential benefits) to service states.

3. Probability estimates. This step involves establishing probability estimates with respect to the various service states. This is considered the critical aspect of Flamholtz's model, and at Witte the technique used is to utilize management's considered judgement.

4. Estimated Service Lives. This step represents the probablistic calculation of the individual's service life.

5. Discount rates. This step represents the determination of a proper discount rate for the computation of present values of the expected future benefits.

An illustration of the value method used at Witte for one individual appears as Exhibits 2 and 3 in Appendix C.

These four experiments have added, and will continue to add, significant contributions to the body of knowledge required to properly answer the key questions about human resource accounting. Chapter three will consider the prospects of continued and expanding use of HRA.

Evaluation

There can be little doubt that human resource accounting has great potential for managerial planning and control. One major premise for its development, its ability to give managers relevant data for such decisions as layoffs, capital budgeting, and personnel development, has already been successfully demonstrated in field studies. As these experiments progress in complexity toward the implementation of value models they will provide managers with even more relevant data. Because conventional accounting systems provide no quantified measure of the effect of changes in human resources on income, managers are encouraged to "use up" human resources to improve their performance. Human resource accounting and accountability would tend to reduce this particular management myopia. This new emphasis on the worth of the individual might also lead to expanded use of more participative management styles, which according to Likert and others, would be a desirable change.

It is not too difficult to envision the expanded use of HRA information in managerial contexts. Based on the Touche Ross experiment alone, one can visualize other predominantly service firms such as advertising, insurance, law, consulting, and engineering, finding similar useful internal applications.

However, there is considerable difficulty in comprehending the extension of human resource accounting to the external reporting function in the near future. There are strong arguments on both sides of this

question at this time. Advocates present convincing points that society in general, and investors in particular, will benefit from such disclosure. Opponents point out that such treatment is not now in accordance with generally accepted accounting principles, that humans do not meet the current definition of assets, and that objective measures of human value have not been developed.

The AAA Committee on Accounting for Human Resources, which supports external use, revealed in its 1974 report that one survey of major CPA firms and two hundred large industrial firms disclosed:[1]

1. Little interest in HRA by CPA firms.
2. Some firms computed human resource costs, but none capitalized them.
3. The use of HRA was considered "impracticable" in making return on investment computations.
4. Users of financial statements show only limited interest in HRA data.
5. HRA for internal use was considered more important than for external use.

In the face of substantial reluctance on the part of such influential businessmen as these, it is doubtful that anything but extremely slow development can be anticipated in this area. In fact, the 1974 Committee report states, "Unless empirical data from organizations using HRA systems are collected, analyzed, and published, the attractiveness of current theoretical arguments for HRA may soon lose their glamour."[2]

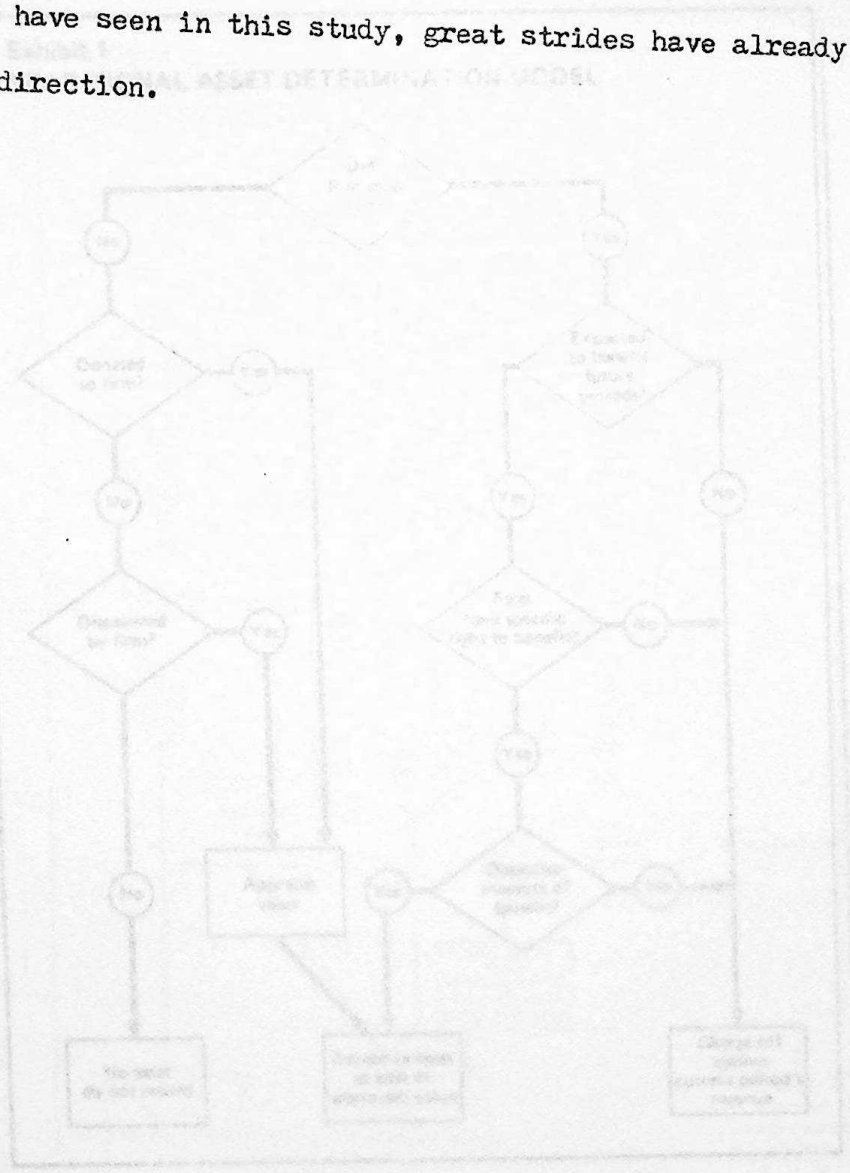
Perhaps Newell has made the best proposal in this regard. It is his idea that the proper approach is to first change the definition of assets so as to include human resources, to sell this new definition to prac-

---

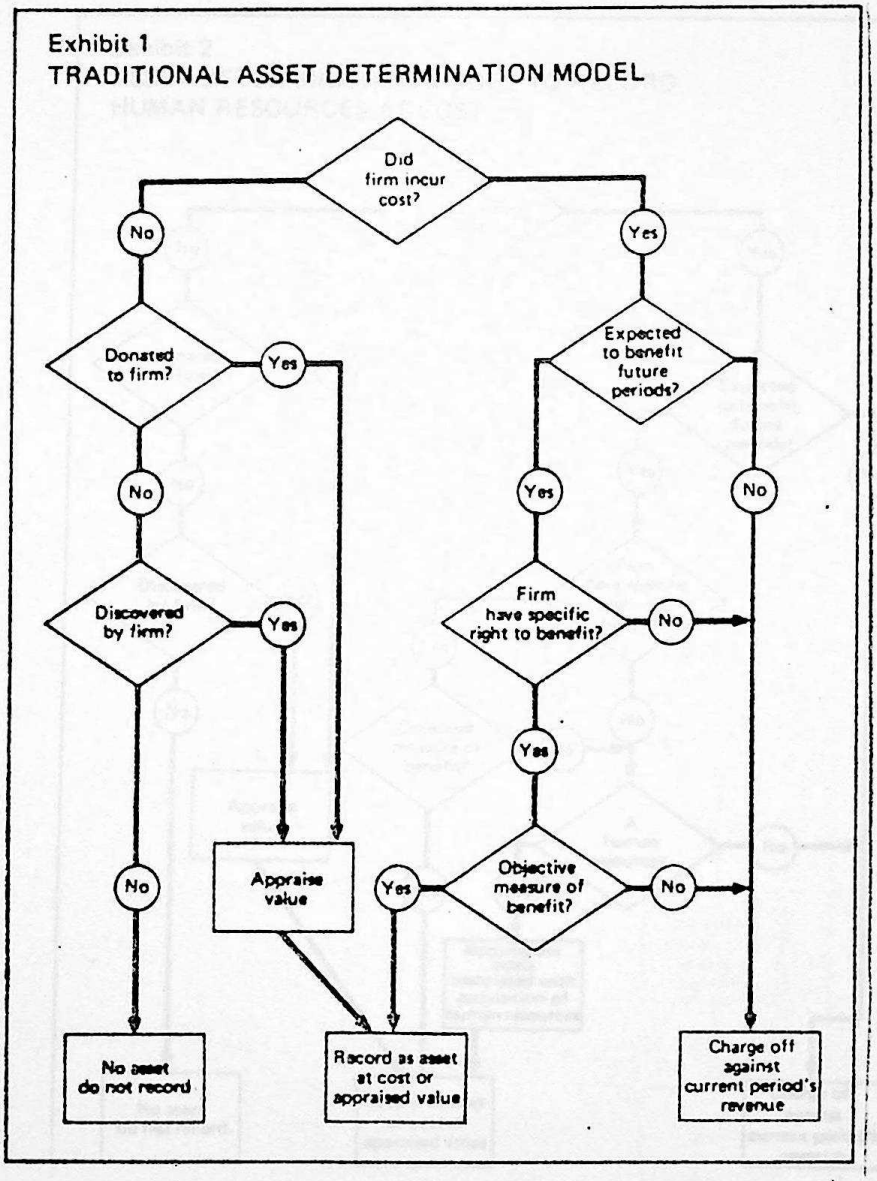
[1] "Report of the Committee on Accounting for Human Resources", Committee Reports, (Supplement to Volume 49 of The Accounting Review), American Accounting Association, 1974, p. 118.

[2] Ibid., p. 124.

ticing accountants, and then to proceed to develop human resource accounting on sound theoretical footing and with the support of fellow accountants. Once proponents of HRA have thus enlisted such backing the last major hurdle will be to develop a valid measurement system. As we have seen in this study, great strides have already been taken in that direction.

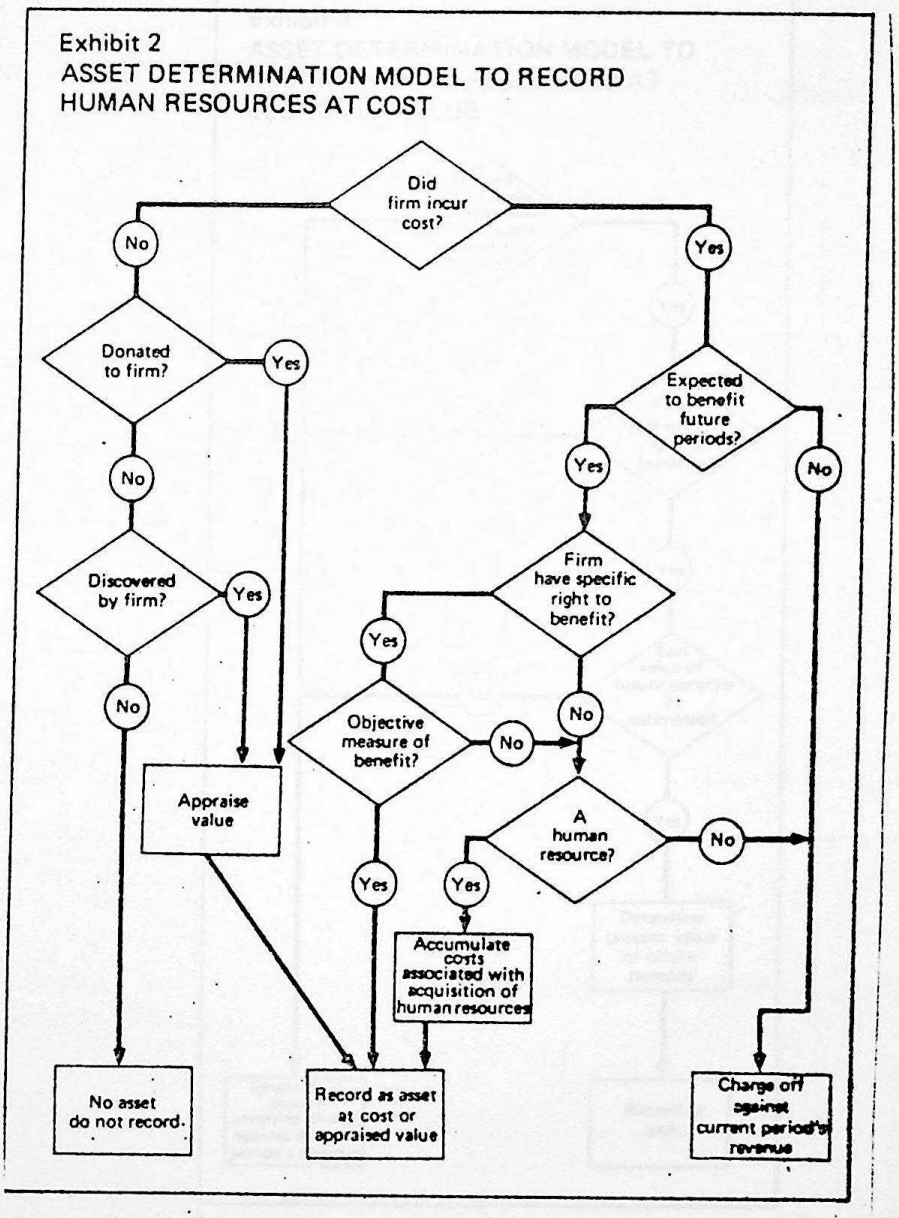


Appendix A



Source: Newell, "Should Humans Be Reported As Assets?" p. 14.

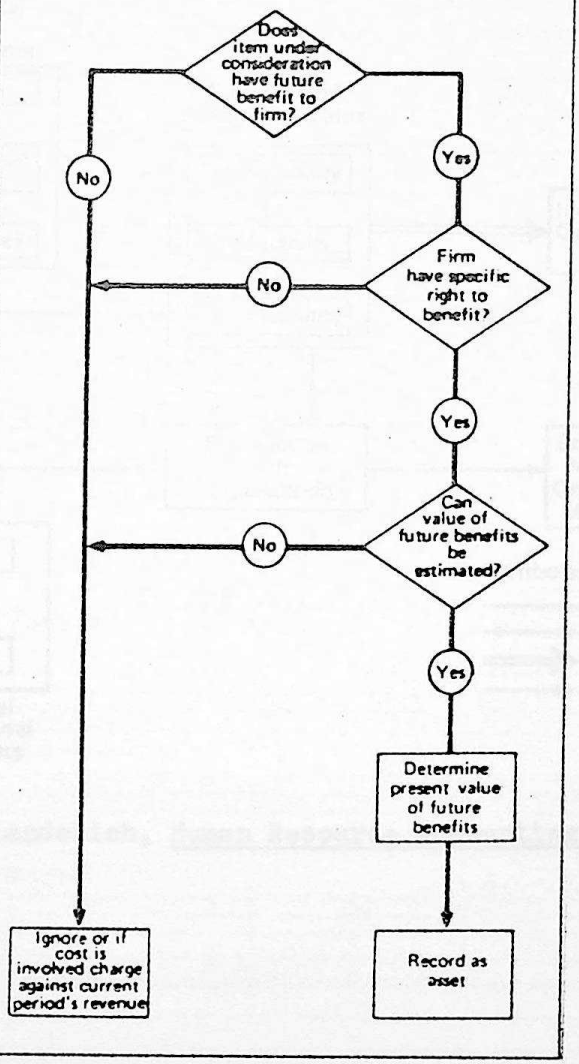
Appendix A



Source: Ibid., p. 15.

Appendix A

Exhibit 3
ASSET DETERMINATION MODEL TO RECORD HUMAN RESOURCES AT ECONOMIC VALUE

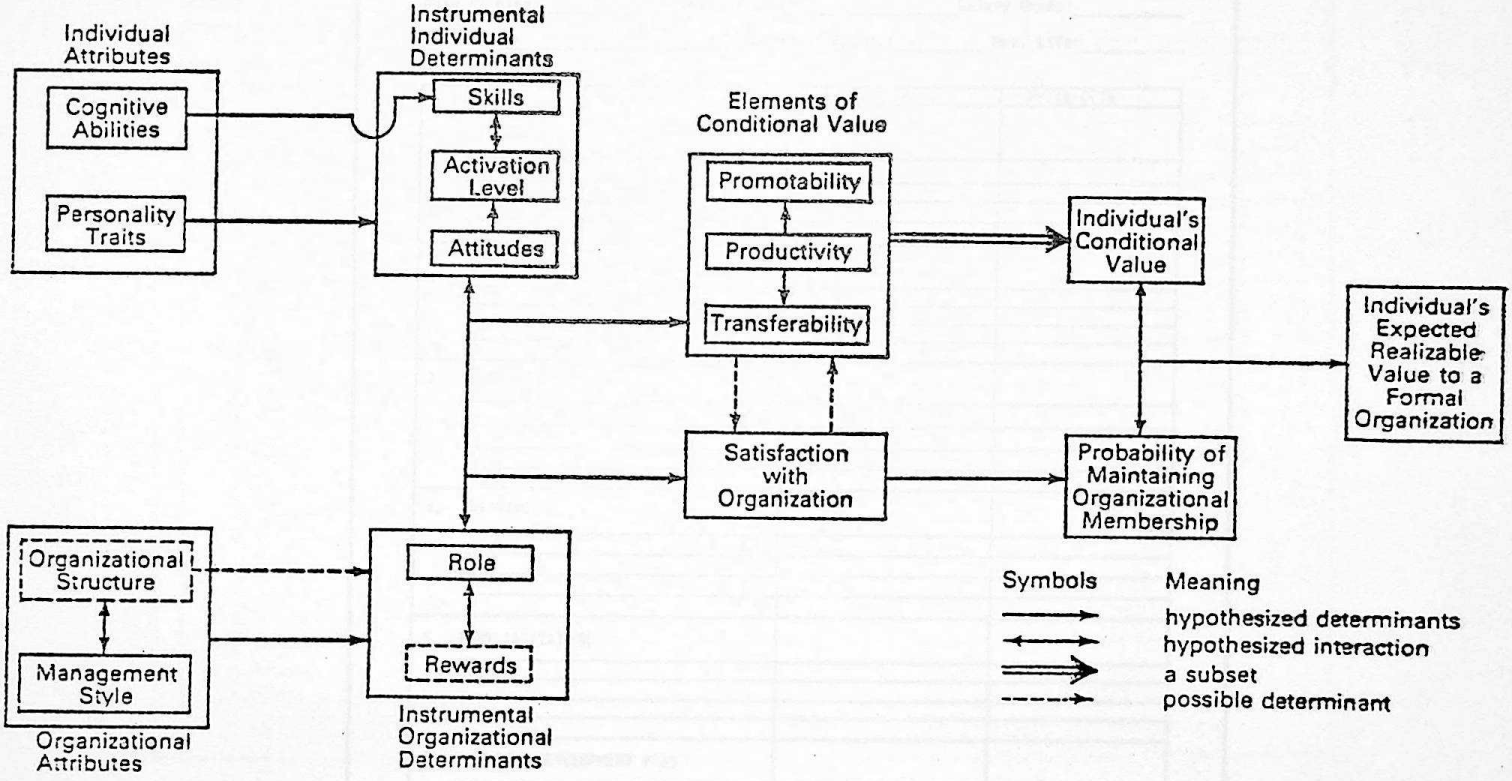


Source: Ibid., p. 16.

Appendix A

Exhibit 4

REVISED MODEL OF THE DETERMINANTS OF AN INDIVIDUAL'S VALUE TO A FORMAL ORGANIZATION



Source: Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 84.

Appendix B

Exhibit 1

Form 120--ASSOCIATE ACCOUNT 7-11

Name:_____ Position:_____ Date:_____

Date of Hire:_____ Date of Birth:_____ Salary Grade:_____

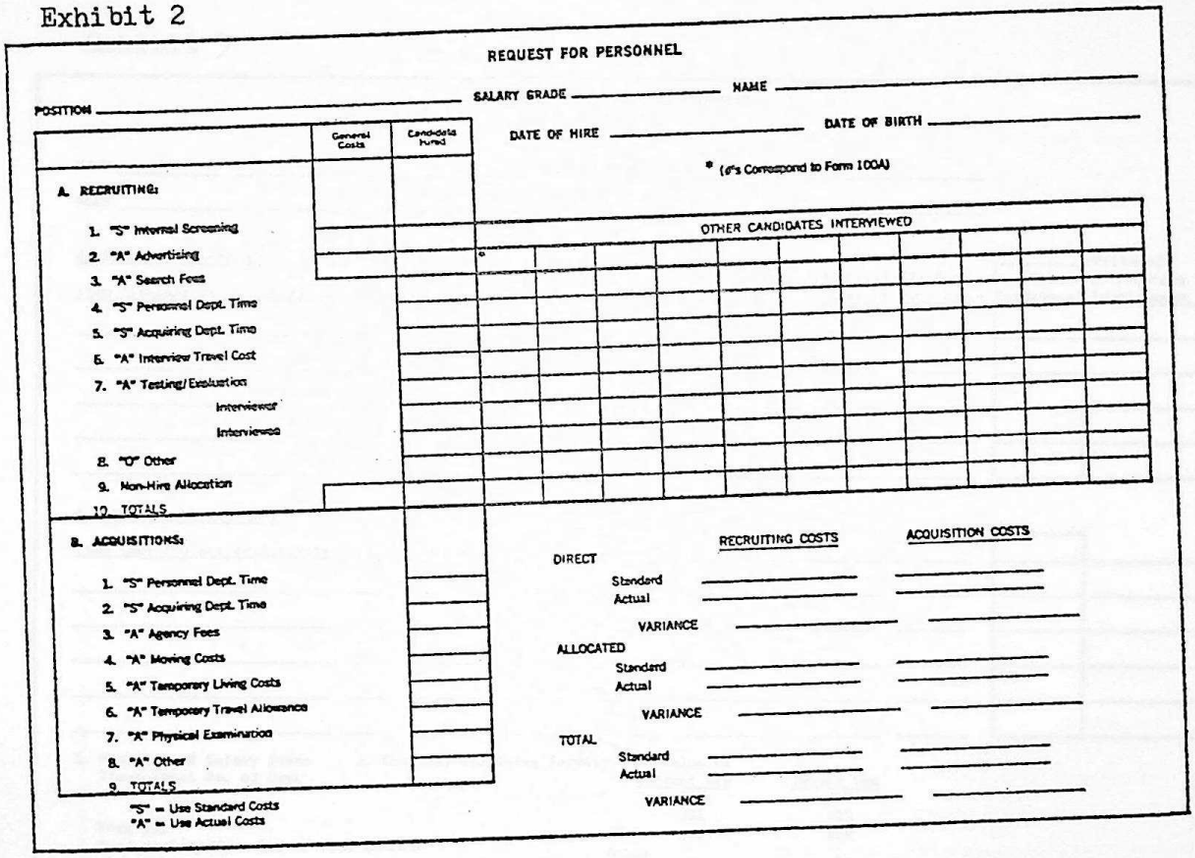
Location:_____ Number of Assoc.:_____ Max. Life:_____

	Account Charges	Write-Offs
1. RECRUITING		
2. ACQUISITION		
3. ORIENTATION		
4. TRAINING		
5. FAMILIARIZATION		
6. INFORMAL DEVELOPMENT #135		
7. FORMAL DEVELOPMENT #130		
8. EXIT COSTS		

Source: Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 93.

Appendix B

Exhibit 2



REQUEST FOR PERSONNEL

POSITION _____ SALARY GRADE _____ NAME _____

DATE OF HIRE _____ DATE OF BIRTH _____

* (#'s Correspond to Form 100A)

	General Costs	Candidate Hired	OTHER CANDIDATES INTERVIEWED											
A. RECRUITING:														
1. "S" Internal Screening														
2. "A" Advertising														
3. "A" Search Fees														
4. "S" Personnel Dept. Time														
5. "S" Acquiring Dept. Time														
6. "A" Interview Travel Cost														
7. "A" Testing/Evaluation														
Interviewer														
Interviewee														
8. "O" Other														
9. Non-Hire Allocation														
10. TOTALS														
B. ACQUISITIONS:														
1. "S" Personnel Dept. Time														
2. "S" Acquiring Dept. Time														
3. "A" Agency Fees														
4. "A" Moving Costs														
5. "A" Temporary Living Costs														
6. "A" Temporary Travel Allowance														
7. "A" Physical Examination														
8. "A" Other														
9. TOTALS														

"S" = Use Standard Costs
"A" = Use Actual Costs

	RECRUITING COSTS	ACQUISITION COSTS
DIRECT		
Standard		
Actual		
VARIANCE		
ALLOCATED		
Standard		
Actual		
VARIANCE		
TOTAL		
Standard		
Actual		
VARIANCE		

Source: Ibid., p. 94.

Appendix B

Exhibit 3

FORMAL & INFORMAL DEVELOPMENT
WORKSHEET

NAME _____ SALARY GRADE _____

DATE _____ SUPERVISOR _____

A. FORMAL DEVELOPMENT

Item (Seminar or Workshop)	Date	Total No. of Days	(1) Time Cost	+ Expenses	(3) Allocated + Cost	= (3) Total Cost	x (2) Eval. Fut. Use =	Total Investment	Write-off of Previous Development

B. INFORMAL DEVELOPMENT

Item (New Project or Activity									

1. Midpoint of Salary Grade Times Total No. of Days

2. Consider Following Format:

	No Value or Current Use	Future Use
	80%	20%
	50%	50%
	20%	80%
Other	___	___

Form 135
Send to Corp HR - End of Each Quarter

Source: Ibid., p. 97.

Appendix B

Exhibit 4

HUMAN RESOURCE CAPITAL BUDGET

Location_____
Supervisor_____

Beginning Balance $_____

4th Current Quarter				Year-To-Date		
Actual # People	COST $ Plan	COST $ Actual	Investments	COST $ Plan	COST $ Actual	12 Month $ Plan
			Management Personnel			
			Additions			
			Replacement			
			Transfer In			
			Development			
			Hourly Personnel			
			TOTAL			
			Write-Offs			
			Management Personnel			
			Amortization			
			Turnover Losses			
			Voluntary			
			Involuntary			
			Transfer Out			
			Hourly Personnel			
			TOTAL			

Ending Balance $_____

Source: Ibid., p. 98.

Appendix B

Exhibit 5

R. G. BARRY CORPORATION
HUMAN RESOURCES REPORT
FOR THE MONTH OF MARCH 1972

LOCATION	NUMBER OF ASSOCIATES		TRANSFERS		HIRE		TERMINATIONS			TURNOVER PERCENT				HRA MONETARY TURNOVER INDEX	AVE. EXP. LIFE	AVE. AGE	HRA EXP. LIFE / MAX. LIFE PERCENT
	EOM	ON LEAVE	IN	OUT	NO.	HRA INV.	NO.	PRES. BAL.	STD. COST	MON	HRA	YTD	YTD HRA				
COURTRIGHT PLANT	343	17	3	0	16	$10848	11	$4117.	$3936	3.0	4.9	9.3	14.6	9.8%	2.3	39	9.0%
C.P.G. WAREHOUSE	31	1	0	0	0	0	0	0	0	0	0	3.2	8.1	0	2.5	35	8.0%
PILLOWS	38	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	39	11.0%
C.P.G. OFFICES	69	0	1	0	0	0	0	0	0	0	2.9	2.9	2.9	0	2.1	41	8.0%
GOLDSBORO	477	14	0	0	6	$700.	11	$6020.	$7043.	2.2	3.9	6.5	10.0	8.5%	1.7	32	5.0%
C.P.G. TOTAL	958	32	4	0	22	$11003.	22	$10516.	$10301.	2.2	3.2	6.8	10.0	7.9%	1.9	36	7.0%
BOBST	173	7	0	5	0	0	8	$4337.	$4600.	4.2	5.8	9.8	11.8	12.1%	2.1	38	8.0%
BENTLEY WAREHOUSE	40	0	0	0	0	0	0	0	0	0	0	27.8	24.8	0	1.7	33	6.0%
CORPORATE OFFICES	33	0	1	0	0	0	1	$733.	$733.	3.0	3.5	3.0	3.5	7.0%	2.4	23	6.0%
TOTAL	1204	39	5	5	22	$11003.	31	$10315.	$21602.	2.5	3.5	7.8	10.2	8.3%	2.0	36	6.3%

1. Explanations identify units to be included in each individual location.
2. End of month total.
3. Leave of absence.
4&5. Transfer between locations, not those within a location.
6. Number of employees hired.
7. HRA investment consists of acquisition, orientation and training costs.
8. Number of employees terminated.
9. Present balance of associate (employee) account.
10. Standard cost of replacement for employees terminated.
11. Conventional turnover percent = number of terminations ÷ average number of employees.
12. HRA turnover percent = present balance ÷ average HRA investment base.
13. Conventional year-to-date turnover percent.
14. HRA year-to-date turnover percent.
15. HRA monetary turnover index.
16. Average expected life.
17. Average age.
18. Percentage of expected life to maximum life.

Source: Ibid., p. 99.

Exhibit 6

"The information presented on this page is provided only to illustrate the informational value of human resource accounting for more effective internal management of the business. The figures regarding investments and amortization of human resources are unaudited and you are cautioned for purposes of evaluating the performance of this company to refer to the conventional certified accounting data further on in this report."

"THE TOTAL CONCEPT"
R. G. Barry Corporation and Subsidiaries
Pro-Forma
(Conventional and Human Resource Accounting)

Balance Sheet

Assets	1972 Conventional and Human Resource	1972 Conventional Only
Total Current Assets	$16,408,620	$16,408,620
Net Property, Plant and Equipment	3,371,943	3,371,943
Excess of Purchase Price over Net Assets Acquired	1,288,454	1,288,454
Deferred Financing Costs	183,152	183,152
Net Investments in Human Resources	1,779,950	—
Other Assets	232,264	232,264
	$23,264,383	$21,484,433
Liabilities and Stockholders' Equity		
Total Current Liabilities	3,218,204	3,218,204
Long Term Debt, Excluding Current Installments	7,285,000	7,285,000
Deferred Compensation	116,533	116,533
Deferred Federal Income Tax Based Upon Full Tax Deduction for Human Resource Costs	889,975	—
Stockholders' Equity:		
Capital Stock	1,818,780	1,818,780
Additional Capital in Excess of Par Value	5,047,480	5,047,480
Retained Earnings:		
Financial	3,998,436	3,998,436
Human Resources	889,975	—
	$23,264,383	$21,484,433

Statement of Income

Net Sales	$39,162,301	$39,162,301
Cost of Sales	25,667,737	25,667,737
Gross Profit	13,494,564	13,494,564
Selling, General and Administrative Expenses	10,190,773	10,190,773
Operating Income	3,303,791	3,303,791
Interest Expense	549,225	549,225
Income Before Federal Income Taxes	2,754,566	2,754,566
Net Increase in Human Resource Investment	218,686	—
Adjusted Income Before Federal Income Taxes	2,973,252	2,754,566
Federal Income Taxes	1,414,343	1,305,000
Net Income	$ 1,558,909	$ 1,449,566

Source: 1972 Annual Report: R. G. Barry Corporation, Columbus, Ohio, p. 12.

Source: Ibid., p. 105.

Appendix C

Exhibit 1

Figure 1

COST OF TIME ANALYSIS REPORT FOR THE YEAR ENDED DEC. 31, 1970

TOTAL OFFICE

	Plan	Man. Var.	Hour Var.	Actual
Chargeable	$738,952	$(7,230)	$(24,724)	$706,998
Investment				
Recruiting	11,500	622	868	12,990
Orientation	11,000	69	1,931	13,000
Counselling and Dev.	10,000	579	1,421	12,000
Formal Training Courses	35,000	100	7,000	42,100
Research	15,500	42	(284)	15,258
Total	83,000	1,412	10,936	95,348
Maintenance				
Practice Develop.	8,694	(124)	(5,850)	2,720
Prof. Affairs and PR	3,064	19	6,825	9,908
Administration	36,864	237	(310)	36,791
Holidays and Vac.	102,000	(742)	(25,892)	75,366
Sickness and Per.	28,932	(68)	8,877	37,741
Total	179,554	(678)	(16,350)	162,526
Total	$1,001,506	$(6,496)	$(30,138)	$964,872

Figure 2

HUMAN RESOURCE INVESTMENTS FOR THE YEAR ENDING DEC. 31, 1970

	PLAN			ACTUAL		
	Outlay	Opport	Total	Outlay	Opport	Total
Recruiting	$ 500	$11,500	$12,000	$1,420	$12,990	$ 14,410
Orientation	2,500	11,000	13,500	2,200	13,000	15,200
Counseiling and Development	1,600	10,000	11,600	400	12,000	12,400
Formal Training Courses	5,000	35,000	40,000	3,500	42,100	45,600
Research	1,400	15,500	16,900	1,200	15,258	16,458
Total	$11,000	$83,000	$94,000	$8,720	$95,348	$104,068

Figure 3

STATEMENT OF HUMAN RESOURCE FLOWS FOR THE YEAR ENDED DEC. 31, 1970

	MANPOWER		INVESTMENTS	
	Plan	Actual	Plan	Actual
Opening Balance	29	29	$112,532	$112,532
Add:				
Transfers in (Other Offices)	4	3	13,000	10,321
Investments:				
Recruiting	10	10	12,000	14,410
Investments in existing personnel during period			82,000	89,658
Total	14	13	$107,000	$114,389
Less:				
Transfers out (other Offices)	6	5	30,000	26,449
Departures	9	8	34,000	33,498
Amortization			32,000	36,381
Total	15	13	$ 96,000	$ 96,328
Closing Balance	28	29	$123,532	$130,594

Figure 4

CONTRIBUTION REPORT FOR THE YEAR ENDING DEC. 31, 1970

Total Office

	Plan	Man Var.	Hr. Var.	Actual
Chargeable Hours X Standard Billing Rates	$738,743	$(6,537)	$(25,220)	$706,986
Less:				
Salaries and Fringe Benefits	240,000	(13,107)		253,107
Amortization of Human Resource Investment	32,000	(4,381)		36,381
Departures	34,000	502		33,498
Standard Operating Contribution before Overhead	$432,743	$(23,523)	$(25,220)	$384,000

Source: Michael Alexander, "Investments in People", p. 41.

Appendix C

Exhibit 2

ECONOMIC VALUES OF SERVICE STATES

Service State	Billing Rate	Chargeable Hours	Gross Economic Value	Compen-sation	Net Economic Value
Staff accountant	$20	2,000	$ 40,000	$20,000	$20,000
Manager	$40	2,000	$ 80,000	$40,000	$40,000
Partner	$60	2,000	$120,000	$60,000	$60,000
Exit	—	—	—	—	—

SERVICE STATE PROBABILITIES FOR EMPLOYEE JEFF DENNIS

Service State	Time Period				
	T1	T2	T3	T4	T5
Staff accountant	.90	.40	.20	—	—
Manager	—	.50	.70	.50	.20
Partner	—	—	—	.40	.60
Exit	.10	.10	.10	.10	.20

Source: Caplan and Landekich, Human Resource Accounting: Past, Present and Future, p. 117.

Exhibit 3

EXPECTED CONDITIONAL VALUE OF EMPLOYEE JEFF DENNIS

Service State	TIME PERIOD					Total E.C.V.
	T1	T2	T3	T4	T5	
Staff accountant	($20,000) 1/1 = $20,000	($20,000) 4/9 = $ 8,889	($20,000) 2/9 = $ 4,444	—	—	$ 33,333
Manager	—	($40,000) 5/9 = $22,222	($40,000) 7/9 = $31,111	($40,000) 5/9 = $22,222	($40,000) 2/8 = $10,000	85,555
Partner	—	—	—	($60,000) 4/9 = $26,667	($60,000) 5/8 = $45,000	71,667
TOTAL	$20,000	$31,111	$35,555	$48,889	$55,000	$190,555

EXPECTED REALIZABLE VALUE OF EMPLOYEE JEFF DENNIS

Time Period	Expected Conditional Value	Probability of Remaining	Expected Realizable Value
T1	$ 20,000	.90	$ 18,000
T2	$ 31,111	.90	$ 28,000
T3	$ 35,555	.90	$ 32,000
T4	$ 48,889	.90	$ 44,000
T5	$ 55,000	.80	$ 44,000
Totals	$190,555	—	$166,000

PRESENT VALUE OF EXPECTED FUTURE SERVICES OF EMPLOYEE JEFF DENNIS

Time Period	Expected Realizable Value	Discount Factor at 6%	Present Value of Expected Services
T1	$ 18,000	.9434	$ 16,981
T2	$ 28,000	.8900	$ 24,920
T3	$ 32,000	.8396	$ 26,867
T4	$ 44,000	.7921	$ 34,852
T5	$ 44,000	.7473	$ 32,881
Totals	$166,000	—	$136,501

Source: Ibid., p. 119.

SELECTED BIBLIOGRAPHY

BOOKS:

APB Accounting Principles, Current Text, Volume One, (Chicago, Commerce Clearing House, 1973).

Caplan, Edwin; Landekich, Stephen. Human Resource Accounting: Past, Present and Future. New York: National Association of Accountants, 1974.

PERIODICALS:

Alexander, Michael O. "Investments in People," Canadian Chartered Accountant 99 (July 1971): 38-45.

Brummet, R. Lee. "Accounting for Human Resources," Journal of Accountancy 130 (December 1970): 62-66.

Brummet, R. Lee; Flamholtz, Eric G.; Pyle, William C. "Human Resource Measurement - A Challenge for Accountants," The Accounting Review 43 (April 1968): 217-224.

Dermer, Jerry; Siegel, Jacob P. "The Role of Behavioral Measures in Accounting for Human Resources," The Accounting Review 49 (January 1974): 88-95.

Eggers, H.C. "The Evaluation of Human Assets," Management Accounting 53 (November 1971): 28-30.

Elias, Nabil. "The Effects of Human Asset Statements on the Investment Decision - An Experiment," Empirical Research in Accounting: Selected Studies, 1972.

Flamholtz, Eric G. "A Model for Human Resource Valuation: A Stochastic Process with Service Rewards," The Accounting Review 56 (April 1971): 253-267.

Flamholtz, Eric G. "On the Use of the Economic Concept of Human Capital in Financial Statements: A Comment," The Accounting Review 47 (January 1972): 148-152.

Flamholtz, Eric. "Toward a Theory of Human Resource Value in Formal Organizations," The Accounting Review 47 (October 1972): 666-678.

Gilbert, Michael H. "The Asset Value of the Human Organization," Management Accounting 52 (July 1970): 25-28.

Jaggi, Bikki; Lau, Hon-Shiang. "Toward a Model for Human Resource Valuation," The Accounting Review 49 (April 1974): 321-329.

Jauch, Roger; Skigen, Michael. "Human Resource Accounting: A Critical Evaluation," Management Accounting 55 (May 1974): 33-36.

Lev, Baruch; Schwartz, Aba. "On the Use of the Economic Concept of Human Capital in Financial Statements," The Accounting Review 46 (January 1971): 103-112.

Materne, Douglas; Vandermeersch, Richard. "Capitalizing Personnel-Retention Costs," Management Accounting 55 (November 1973): 27-29.

McRae, Thomas W. "Human Resource Accounting as a Management Tool," The Journal of Accountancy 138 (August 1974): 32-39.

Meyer, Philip E. "Human Assets Accounting in the Professional Sports Industry," CPA Journal 43 (May 1973): 417-419.

Morse, Wayne J. "A Note on the Relationship Between Human Assets and Human Capital," The Accounting Review 48 (July 1973): 589-593.

Newell, Gale E. "Should Humans Be Reported As Assets?" Management Accounting 54 (December 1972): 13-16.

"People are Capital Investments at R.G. Barry Corporation," Management Accounting 53 (November 1971): 53-55, 63.

Peterson, S.E. "Accounting for Human Resources," Management Accounting 54 (June 1972): 19-22.

"Report of the Committee on Accounting for Human Resources," Committee Reports (Supplement to Volume 49 of The Accounting Review), American Accounting Association, 1974, p. 115-124.

"Report of the Committee on Human Resource Accounting," Committee Reports (Supplement to Volume 48 of The Accounting Review), American Accounting Association, 1973, p. 169-185.

Weiss, Marvin. "Human Resource Accounting - A Neglected Area," CPA Journal 42 (September 1972): 735-741.

Woodruff, Robert L., Jr. "Human Resource Accounting," Canadian Chartered Accountant 97 (September 1970): 156-161.

Woodruff, Robert L., Jr. "Measuring Staff Turnover," Canadian Chartered Accountant 102 (February 1973): 37-40.