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Many companies do an inefficient job of estimating future salary costs, but there's really no need to leave top management guessing.

Projecting Base Payroll Costs

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How much salaries will cost is one of the first questions management asks when reviewing pay program proposals or preparing long-term financial projections. Since payrolls are frequently an organization's largest operating expense, it is hard to underestimate the importance of providing an accurate answer to that question. Only if management has a clear understanding of the cost of a salary proposal will the company be able to take steps such as changing prices or altering the mix of capital and labor that will enable the organization to absorb the proposal's financial impact. This article outlines a costing procedure that will help compensation administrators prepare more realistic and complete estimates of changes to base payroll.

Once an organization has compared its salaries with those of its labor market competitors and has decided to strive for a certain level of competitiveness, the organization must establish procedures for allocating increases among employees and determining the anticipated cost of these increases. The allocation and costing pro-

cedures must be considered together because the procedure for determining the cost of a pay plan must be designed around the characteristics of the allocation method.

Organizations carry out these functions in many ways. One common method for allocating increases is by matrix guidelines that provide individual increases based on performance in relation to range position. Using these guidelines, organizations forecast their salary increases and determine costs from the forecast increases. Another method is to allocate increases to employees based on merit within certain parameters and controlled to a specified yearly average amount and time between increases. Often the average varies for different groups of employees. The cost is determined by taking an annualized percentage of the base payroll for each group at the beginning of the program year.

These examples do not reflect the wide variety of methods available. Nevertheless, they are representative of the methods organizations commonly use and indicate the relatively unsophisticated nature of many costing methods.

Some Deficiencies of Costing Procedures Existing costing procedures are normally deficient in one or more of the following areas: (1) They do not account for the effects of employee turnover, (2) they ignore or inaccurately predict the impact of net changes in employee population, and (3) they overlook habitual deviations from authorized practices.

Turnover can have a major impact on anticipated salary expenditures because of the differences in salaries of employees leaving and joining the organization. Normally, turnover will lower costs because employees who terminate usually are higher paid than those who replace them. In fact, because of turnover, some companies have installed salary programs that added nothing to total payroll.

The impact of turnover is generally more complex than that, however, because turnover seldom results in the simple replacement of one employee by another. Often employees are not replaced by others with the same job, and there is a constant change in the mix of various kinds of employees. The effect of turnover can best be determined by examining historically the relationship of the salaries of new hires to those of terminees.

Net changes in population and turnover are generally considered together, but they can be viewed as separate phenomena. The cost effects of population changes can be particularly difficult to forecast because they often vary substantially from year to year depending on economic conditions. This information is best generated from an organizationwide manpower planning and forecasting system. But where no forecasting system is available, or where the forecasting cycle is not in synchronization with costing needs, the information will have to be derived from historical trends in population change.

Regardless of what spending controls are established, deviations from expected

levels of spending often occur. This occurs especially when a revised or new merit program is introduced and supervisors are slow to adjust their spending to the new instructions. In addition, some companies actually encourage deviations from policy in special cases; they believe that supervisors should not be bound to rigid spending controls. Where measurable deviations occur consistently, provision must be made for anticipating their cost impact by looking at the historical relationship between authorized and actual merit increases.

One Way to Improve Pay Plan Costing

The procedure described here attempts to deal with the deficiencies that reduce the usefulness of existing methods of costing pay plans. Figure 1 presents the suggested costing formula. By the use of examples, we will explain how to obtain information for each component of the formula. It is assumed in the examples that costs are to be projected for a 12-month period.

Figure 1
Payroll Costing Formula

$$\left[\frac{(BMP \times AAI \times PR)}{12} \pm PC\&T + PRO \right] \times 78 = CTP$$

- Where: *BMP* = Beginning month payroll
AAI = Average annualized increase
PR = Participation rate
PC&T = Population change and turnover cost
PRO = Promotion cost
CTP = Cost to payroll

Beginning month payroll (*BMP*) is the total base monthly payroll at the start of the program year. Most organizations will have this information available in various personnel and financial reports. In this example, we will assume that there are 100 people in the organization with a payroll of \$110,000 a month.

The average annualized increase (*AAI*) is a combination of the effect on payroll of the expected average interval between increases and the average amount of increase during a one-year period. The annualized increase has the effect of allocating increases uniformly throughout the year and takes into account the higher base salary of employees who receive a second increase within the year because the interval between increases is less than 12 months. In this example, the expected average increase is 8 percent with an interval between increases of 10 months. Most commonly, these increases would be based on merit. Figure 2 explains how the annualized increase is obtained.

In some instances, the average annualized increase may have to be adjusted to take into account the possibility that increases may be awarded at intervals or in

Figure 2

Determining the Annualized Increase Component

$$\frac{\text{Average amount of increase} \times 12 \text{ months}}{\text{Average monthly interval between increases}} = \text{Average annualized increase}$$

$$\frac{.08 \times 12}{10} = .096$$

amounts different from what is authorized. These differences arise particularly in organizations that emphasize local division autonomy. If deviations are consistent over an extended period of time, it may be desirable to introduce an adjustment that anticipates their occurrence.

We will assume in this case that the data available demonstrates a need for an adjustment in the expected interval between increases. This information can be obtained by examining the historical relationship between the actual and authorized interval between increases.

We may find, for example, that last year the actual average interval was 11.5 months while the authorized interval was 12 months. This year the authorized average interval is 10 months. If the past relationship between the authorized and actual interval is a valid guide for the future, we can set up a simple ratio equation and solve for the expected future actual interval.

Figure 3 presents this calculation. In the example, the expected interval will be 9.58 months. This corrected interval can be inserted in place of 10 months in the annualizing formula to yield an *AAI* of 10.02 percent instead of 9.6 percent.

Participation rate (*PR*) is defined as the ratio of salary actions given to the total number possible during a specific time period. Participation is significant because if not all of the possible salary actions are awarded, then a smaller proportion of base payroll than expected is actually increased. If this situation occurs, there must be an adjustment that reduces the projected expenditure. Unless an organization sets a specific participation rate objective, this information will have to be obtained from a historical comparison of what actually occurred to the number of possible

Figure 3

Adjustment for Authorized vs. Actual Interval

$$\frac{\text{Past year's authorized interval}}{\text{Past year's actual interval}} = \frac{\text{Next year's authorized interval}}{\text{Next year's actual interval}}$$

$$\frac{12}{11.5} = \frac{10}{X}$$

$$\frac{11.5 \times 10}{12} = 9.58 \text{ months}$$

actions. Consequently, if it is anticipated that only 90 percent of the employees are going to receive a salary action, the annual merit increase cost must be multiplied by .90 to eliminate the 10 percent not participating.

After the participation rate is considered, the resultant cost is divided by 12 to obtain a monthly cost. So far, our calculation would read $(\$110,000 \times .1002 \times .90) \div 12 = \827 a month.

The effects of population change and turnover (*PC&T*) on merit salary costs will be considered together. In this article, we are looking only at an increase in population. However, with minor alterations, the procedure can be made to account for declines in population as well. In the example, it is assumed that population forecasts are not available and, consequently, that population-change information must be derived from historical trends. The effects of turnover on costs would be obtained from historical data in any case.

The procedure for determining the effects of population change and turnover require that the organization record monthly the salaries of new hires and terminatees. Preferably, these data extend back several years. Figure 4 illustrates the type of information that must be collected each month.

In order to determine the average monthly additional cost to payroll, all monthly changes to payroll would be averaged. Therefore, if the monthly net addition to payroll was \$1,500 as in the calculation below, that amount would be added to our formula as the population change and turnover cost.

If population changes are not expected to follow historical patterns, there must be a way to separate turnover and growth. In the example shown in figure 4, it is assumed that all new hires come in at the new-hire average salary of \$1,000, and that there were two more new hires than terminatees. Therefore, in this case, population growth accounts for a change in payroll of \$2,000 ($\$1,000 \times 2 = \$2,000$). However, turnover normally acts to reduce payroll, as in this example. Since new-hire salaries in the example were lower than those of terminatees, there was a cost saving of \$125 per replacement hire. This saving multiplied by the number of persons directly replaced (four) gives total monthly turnover savings of \$500.

Promotion (*PRO*) costs are determined by examining historical data to find the

Figure 4
Data for Population Change and Turnover Component

	Month	Year	N	Monthly Base Payroll
New hires			6	\$ 6,000
Terminations			4	4,500
			+2	\$ +1,500
				Net monthly addition to payroll

number of employees getting a promotion each month and the average promotional increase. As Figure 5 shows, if 2.1 percent of the population is promoted each month and the average increase of those being promoted is 10 percent, the monthly promotional cost is \$231.

Figure 5
Calculating Promotion Costs

<i>BMP</i>	X	Average proportion of employees promoted each month	X	Average promotional increase	=	Monthly promotional cost
\$110,000	X	.021	X	.10	=	\$231

The factor of 78 shown in the costing formula (Figure 1) is used to convert the monthly cost to an annual cost—78 is the total number of times the monthly cost must be paid if cost is being determined for a year. For instance, the merit dollars paid in January will be paid 12 times, the merit dollars paid in February, 11 times, and so forth.

The various components of the costing formula now can be shown together. If we insert the figures discussed above according to the formula shown in Figure 1, it will read:

$$[(\$110,000 \times .1002 \times .90)/12 + \$1,500 + \$231] \times 78 = \$199,497$$

Thus, an additional \$199,497 (CTP) will be spent on base payroll in the coming year. From an annual payroll of \$1,320,000 (12 × \$110,000) at the start of the year, the cost rises to \$1,519,497 at yearend, an increase of 15 percent.

Adjusting to Individual Needs

Like so many other financial procedures, the accuracy of cost projections is only as good as the information available for them. An established data base is essential; if the organization is of medium or large size, this data should be computer generated. The use of

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the computer is one of the key elements in making inexpensive, accurate cost projections; yet its value has been generally ignored. For example, a recent study of the use of the computer to estimate the costs of various union pay demands indicated that only seven out of 225 firms surveyed employed the computer for this purpose. Although it has not yet been attempted, the procedure suggested here probably can be adapted for computerization.

This procedure has several limitations. It is based largely on the assumption that historical trends will continue in the future. As indicated above, the accuracy of the projections of population changes would be improved if they were derived from manpower forecasts instead of historical information. If historical information must be used, however, it is wise to discuss possible changes in population trends with management. Another limitation of this procedure is that it does not consider the cost of other forms of compensation that are a function of base salary, such as payments for social security, overtime, and shift differentials. The cost of these payments should not be overlooked and must be determined by other methods.

Any costing procedure must be adapted to fit the pay practices of the organization using it, and this procedure is no exception. Organizations giving general increases, for example, would have to revise the formula. Where an organization raises its salary ranges and then adjusts the salaries of employees below the new range minimums, there is added cost. Nevertheless, the procedure suggested here provides the basic elements from which compensation administrators can more accurately project changes to base payroll.

