Forecasting the Demand for Human Resources

Introduction -

- Human resource (HR) demand forecasting is the process of estimating the future quantity and quality of people required. The basis of the forecast must be the annual budget and long-term corporate plan, translated into activity levels for each function and department.

- In a manufacturing company, the sales budget would be translated into a production plan giving the number and type of products to be produced in each period. From this information, the number of hours to be worked by each skilled category to make the quota for each period, would be computed. Once the hours are available, determining the quality and quantity of personnel will be the logical step.

FACTORS AFFECTING HR DEMAND FORECASTING -

Human Resource Demand Forecasting depends on several factors, some of which are given below.

- Employment trends;
- Replacement needs;
- Productivity;
- Absenteeism; and
- Expansion and growth.

IMPORTANCE OF HR DEMAND FORECASTING -

- There are several good reasons to conduct demand forecasting. It can help:
- quantify the jobs necessary for producing a given number of goods, or offering a given amount of services;
- Determine what staff-mix is desirable in the future;
- Assess appropriate staffing levels in different parts of the organization so as to avoid unnecessary costs;
- Prevent shortages of people where and when they are needed most; and
- Monitor compliance with legal requirements with regard to reservation of jobs.

Forecasting Techniques:

HR Forecasting techniques vary from simple to sophisticated ones. Before describing each technique, it may be stated that organizations generally follow more than one technique. The techniques are:

- Ratio-trend analysis
- Regression analysis
- Work study techniques
- Delphi technique
- Flow models
- Other forecasting techniques

1. Ratio-trend Analysis

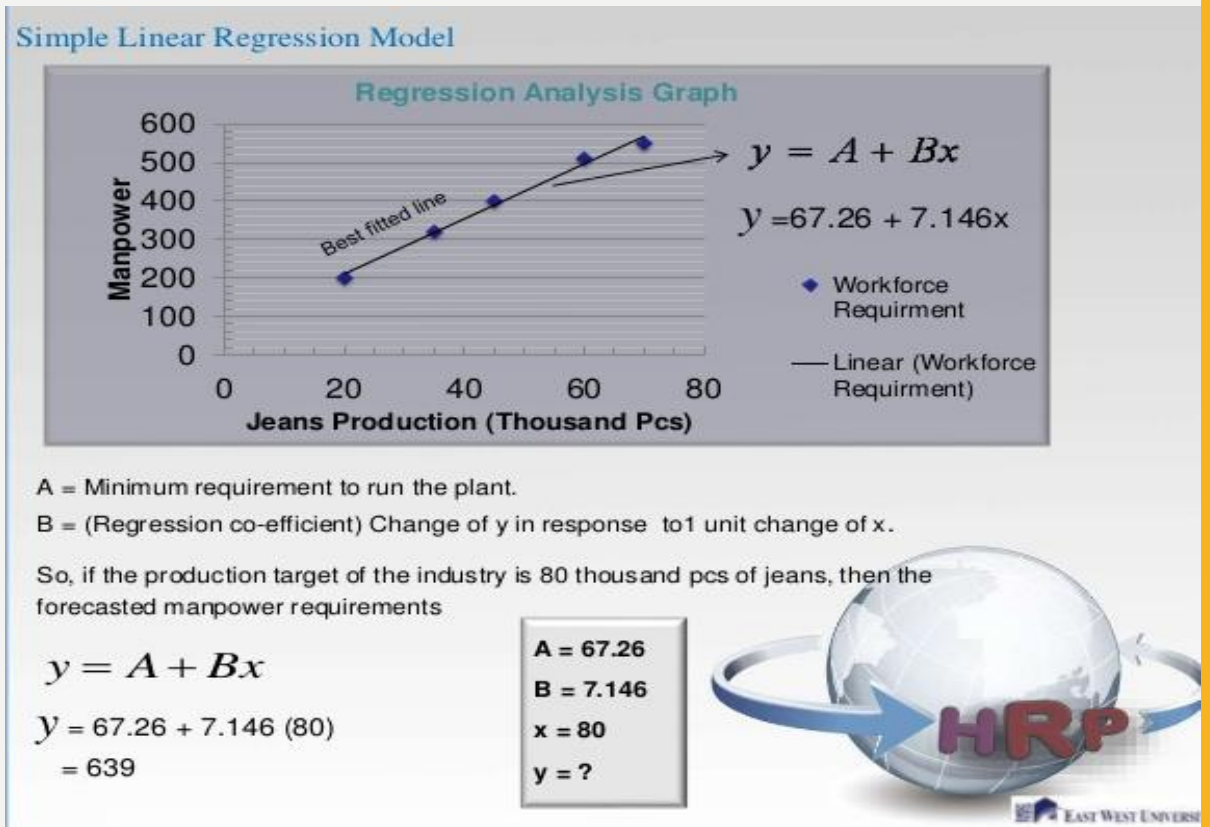
This is the quickest HR forecasting technique. The technique involves studying past ratios, say, between the number of workers and sales in an organization and forecasting future ratios, making some allowance or changes in the organization or its methods.

Example of trend analysis –

- Production of Units : 5,000
- No. of Workers : 100
- Ratio : 100:5000 = 0.02
- Estimated Production : 8,000
- No. of Workers required : 8000 × 0.02 = 160

2. Regression Analysis

This is similar to ratio-trend analysis in that forecast is based on the relationship between sales volume and employee size. However, regression analysis is more statistically sophisticated. A firm first draws a diagram depicting the relationship between sales and workforce size. It then calculates regression line – a line that cuts right through the center of the points on the diagram. By observing the regression line, one can find out number of employees required at each volume of sales.

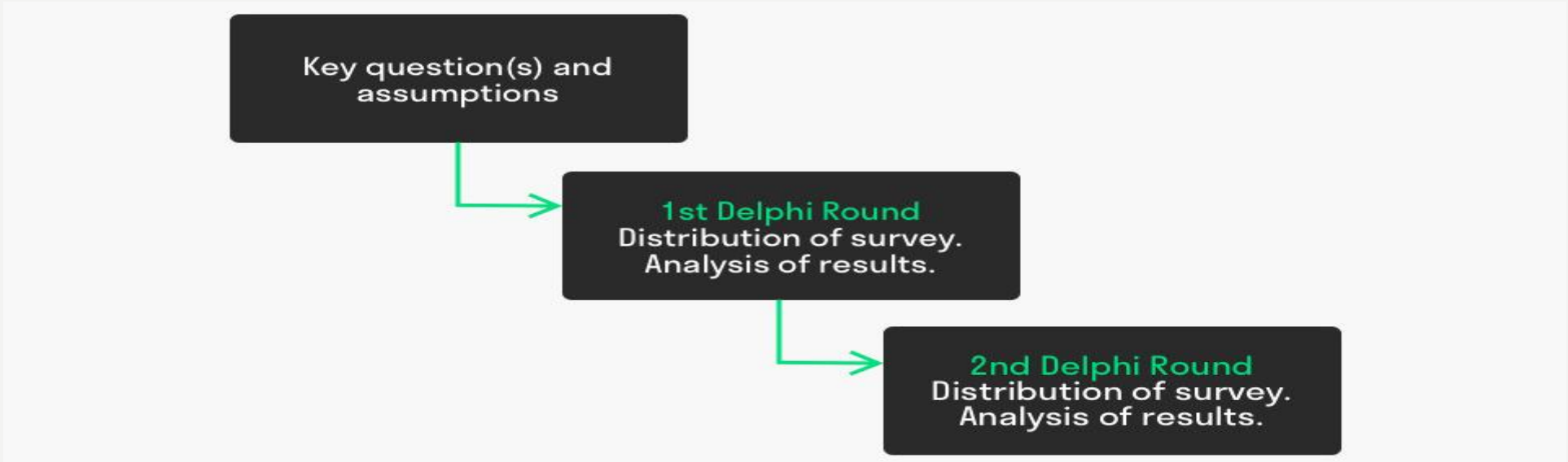


3. Work-study Techniques

Work-study techniques can be used when it is possible to apply work measurement to calculate length of operations and the amount of labor required. The starting point in a manufacturing company is the production budget, prepared in terms of volumes of saleable products for the company as a whole, or volumes of output for individual departments. The budgets of productive hours are then compiled using standard hours for direct labor. The standard hours per unit of output are then multiplied by the planned volume of units to be produced to give the total number of planned hours for the period. This is then divided by the number of actual working hours for an individual operator to show the number of operators required.

4. Delphi Techniques

Delphi Technique Named after the ancient Greek Oracle at the city of Delphi, the Delphi technique is a method of forecasting personnel needs. It solicits estimates of personnel needs from a group of experts, usually managers. The human resource planning (HRP) experts act as intermediaries, summarize the various responses and report the findings back to the experts. The experts are surveyed again after they receive this feedback. Summaries and surveys are repeated until the experts' opinions begin to agree. The agreement reached is the forecast of the personnel needs. The distinguishing feature of the Delphi technique is the absence of interaction among experts.



5. Flow Models

Flow models are very frequently associated with forecasting personnel needs. The simplest one is called the Markov model. In this technique, the forecasters will:

1. Determine the time that should be covered. Shorter lengths of time are generally more accurate than longer ones. However, the time horizon depends on the length of the HR plan which, in tum, is determined by the strategic plan of the organization.
2. Establish categories, also called states, to which employees can be assigned. These categories must not overlap and must take into account every possible category to which an individual can be assigned. The number of states can neither be too large nor too small.
3. Count annual movements (also called ‘ flows’) among states for several time periods. These states are defined as absorbing (gains or losses to the company) or non-absorbing (change in position levels or employment status). Losses include death or disability, absences, resignations and retirements. Gains include hiring, rehiring, transfer and movement by position level.
4. Estimate the probability of transitions from one state to another based on past trends. Demand is a function of replacing those who make a transition.

There are alternatives to the simple Markov model. One, called the semi-Markov, takes into account not just the category but also the tenure of individuals in each category. After all, likelihood of movement increases with tenure. Another method is called the vacancy model, which predicts probabilities of movement and number of vacancies. While the semi-Markov model helps estimate movement among those whose situations and tenure are similar, the vacancy model produces the best results for an organization.

6. Other Forecasting Techniques

New venture analysis will be useful when new ventures contemplate employment planning. This technique requires planners to estimate HR needs in line with companies that perform similar operations. For example, a petroleum company that plans to open a coal mine can estimate its future employment needs by determining employment levels of other coal mines.


Thank You