

The concept of manpower forecasts finance essay

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Introduction

Manpower Forecasting is the first step of the entire manpower planning activity. The manpower planner foresees the demand and supply of different types of manpower resources in the firm. The basic idea is to look into in which department; unit or level there is a shortage or surplus of human requirements. Forecasting is the process of making judgments about accrued events whose actual outcomes have not been seen. Successful manpower planning depends upon two critical steps . First one is estimating the manpower demand accurately and the second one is ensuring the manpower supply to meet the forecasted demand. Demand forecasting and Supply forecasting go hand in hand. The job of the manpower planner is to take suitable steps to bridge the gap between Demand and Supply. That requires proper, systematic estimation of the future needs of an enterprise and a clear understanding of the trends of the dynamic business environment. The absence of required systematic work in this direction may put the organisation to encounter many surprises in terms of human resource

requirements and thereby making it unable to cope up with the future challenges. The absence of the right persons at the right time may prohibit the fullest accomplishment of corporate plans and programmes. There is also high probability of incurring losses because of the organisations' inability to cash in the opportunities. All of these factors necessitate both Demand Forecasting as well as Supply Forecasting.

CONCEPT OF MANPOWER FORECASTS

To understand the concept of forecasting, a thin line of distinction is there between the different concepts like 'projections', 'estimates' and 'forecasts'. 'Projections' are predictions of outcome at the responses of spontaneous forces. The outcome which is expected to happen in the normal course of events with the absence of external stimulus is projection. They are mathematical extensions of existing manpower data into the future. On the other hand Estimates' are educated guesses. Estimates are calculated approximately based on experiences and opinion of experts. Forecasts refer to predictions of outcome when normal course of events are influenced, altered and changed by extraneous factors. Forecasts usually take into account both projections and the estimates. Depending upon the purpose of forecasting, there could be different types of Forecasts. Some of the major types of forecasts are described below. HR plans heavily depend on forecasts, expectations, and anticipation of future events, to which manpower requirements both in terms of quality and quantity are directly linked. Moreover, uncertainty adds complexity to forecasting. Manpower Forecasting is defined as, "the prediction of future levels of demand for and supply of workers and skills at organizational level, at regional level, or could

be at national level. A variety of techniques are used in manpower forecasting. It includes the statistical analysis of current trends and the use of mathematical models. At national level, analysis of census statistics is included. At organizational level, sales and production figures is the base upon which projections of future manpower requirements are made".

NEED FOR MANPOWER FORECASTS

The long gestation lags to produce skilled professional people is the basic rationality and necessity of manpower forecasts. Proper manpower forecasts well in advance facilitate planning of education and training. It is an effort to ensure that required manpower both in terms of quality and quantities are available at the time when they are demanded. Imperfections in the labour market is the another major reason of manpower forecast. Markets for manpower with long lead time to produce skilled people are characterised by long lags in the supply side and short lags on the demand side. Therefore supply is to be planned in order to meet the demand. If that does not happen, there is a high probability that the labour market may lead to distortions in occupation-education correspondence. As a result of which there could be mounting educated unemployed or inadequately trained people taking up different occupations for which they are not competent enough or both. Manpower Forecasts are expected to facilitate correction of labour market distortions. Another major reason of man power forecast is that, in the short-run, elasticities of substitution among various skills is considered to be either zero or near zero. Which necessitates different categories of skilled manpower in fixed proportion for production of goods and services requires. In such a situation shortages of any skilled category of manpower, would adversely affect the production of goods and services within the economy. Manpower Forecasts

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would help in avoiding such types of situation by facilitating anticipation of skill shortages and planning skill supplies accordingly. Types of Forecasts

Short-Term Forecasts

Short-term forecasts are usually made for a period not exceeding two years. Short-term forecasts are very useful at the micro-level i. e company level or department level.

Medium-Term Forecasts

The horizon for planning for medium term forecasts is generally about two to five years. Medium term forecasts are useful for those offices which are concerned with advising ministers or preparing contingency plans to meet the ' twists and turns of economic circumstances or international events'.

Long-Term Forecasts

Forecasts for a period of more than five years are considered as long-term forecasts. Long-term manpower forecasts are useful in educational planning. Planning for requirements of highly skilled professional categories of manpower are forecasted on long term basis. Long term forecasts are very useful in the preparation of corporate plans incorporating productivity changes, technological changes and major organisational developments.

Policy Conditional Forecasts

Policy conditional manpower forecasts are determined by the man power policy factors which influence the demand for manpower. Such types of manpower forecasts are based upon a rule of thumb. Sometimes professional judgement or an explicitly specified model is used for policy conditional forecasts.

Onlookers Forecasts

An onlooker manpower forecasts are those which are derived by assuming that the factors influencing future manpower demand behave in similar way as they did in the past. Like policy conditional forecasts, onlookers' forecasts are also obtained with the help of a rule of thumb, or professional judgement, or an explicitly specified model, or any combination of the three.

Optimising Forecasts

Optimising manpower forecasts are done within the framework of an optimisation model. In this type of forecast, demanded numbers of various categories of manpower are so determined that either the end benefits are maximised, or cost of resources used in achieving a pre-determined end objective is minimised.

Macro and Micro Forecasts

There is a clear distinction between macro and micro forecasts, primarily because of two reasons. First, the end purposes of the two types of forecasts are different. Second, the methodologies employed and data base used are different. It is, however, possible that micro forecasts, if properly planned, might ultimately lead to macro forecasts but not vice-versa. Macro forecasts are done usually at the national, industry/sector and region/state levels.

They are primarily used in: Planning education and training facilities.

Decision making for the choice of industries for development of economy.

Choice of location, technology, and size of organisation among selected industries. Determining order of priorities for creating and expanding

economic and social infrastructure. Micro forecasts have relevance at the enterprise or department level. Micro manpower forecasts are needed

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primarily for planning, recruitment and selection, promotion, training and counselling purposes in order to meet the plan for the development of an enterprise or department concerned. Therefore details and precise forecasts are very much required at this level. The micro forecasts are usually expressed in terms of numbers required for each occupation. It also takes into account the source and stage of recruitment, scheduling of training and so on and so forth. This chapter deals with micro level demand forecasting in details. MICRO LEVEL MANPOWER DEMAND FORECASTING Forecasting the number and type of people needed to meet organizational objectives is considered as an important component of HRP. This step results in estimation of both short term and long term staffing requirement of an organisation. Therefore, forecasting is the foundation of the planning activity. Demand Forecasting is concerned with the process of evaluating the quality and quantity of employees an organization requires to meet its future manpower needs. A forecast could be a long-term or a short-term plan depending on the activity levels for each function and department. There are several internal and external factors to be taken considered in Demand Forecasting. Internal factors include budget constraints, production levels, new products and services. External factors include competition from other firms. It could be from the domestic or international firms, their economic value, changes in technology etc. If done for a long-term period of time, demand forecasting may not yield very accurate result. For short range planning of less than a year, a fairly accurate forecast may be possible. Again no processes or techniques can capture all the parameters and variables required for accurate long-term estimation of manpower needs. Dynamic business environment, rapidly technological changes and their

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impact on products and production methods along with political, social and economic changes and above all the game of competition keep changing the set of circumstances assumed at the time of forecast. CAUSES OF MANPOWER DEMAND FORECASTING: A lot many of factors cause manpower demand forecasting. Primarily manpower demand forecasting arises due to external challenges of the business, organisational decisions and work force factors.

External challenges:

Economic development: Though it is difficult to estimate, economic development such as inflation, unemployment and changing workforce has got noticeable effect on manpower demand. Social, political and legal challenge: These changes are easily predictable. Hence the impacts on manpower demand forecasting. But the implications are not very clear. **Technical change:** Though it is difficult to predict and asses, radically alter HR strategies and plans and makes complicated. For example in IT field, mass recruitment in one department reduces employment in other.

Organisational decisions:

In order to respond to environmental changes, organisations strategic plans are modified accordingly. Firms may commit to long range objectives associated with growth, new products, markets and services. These objectives dictate number and types of employees needed for future.

Work force factors:

Man power demand of an organisation is modified by employees' activities such as retirements, resignations, terminations, death and leaves of

absence. METHODS AND TECHNIQUES OF MANPOWER DEMAND

FORECASTING

Manpower demand forecasting is the process of estimating the

future human resource need of an organisation with right number and of

right quality. It is an educated guess of how much manpower will be required

and utilized optimally by an organization at a future point of time. Future

human resource needs is to be estimated within the broader framework of

organisation's plans over a given period of time. Employment trends ,

replacement needs of employees that arises due to death, resignations,

retirement, and termination, productivity of employees, growth and

expansion plan of the business , absenteeism rate and rate of labour

turnover are the factors to be taken into account while doing human

resource forecasting. Demand forecasting gets affected by a number of

external as well as internal factors. Job Analysis along with forecasting about

the quality of potential human resources facilitates demand forecasting.

Therefore, existing job design must be thoroughly evaluated with due

cognizance of the future capabilities of the present employees. There is no

right way of forecasting, but there are many different types of forecasting

methods. Broadly, two approaches used in forecasting the demand for

human resources are quantitative and qualitative. The quantitative approach

uses statistical and mathematical techniques. The qualitative approaches to

HR planning use expert opinion. It includes Delphi Technique and Nominal

Group Method. FORECASTING USING QUANTITATIVE TOOLS

Quantitative methods are based on the assumption that the future is an extrapolation

from the past. The followings are different methods of manpower demand

forecasting using quantitative tools.

Work Study Technique

It is a work measurement technique. Work measurement technique can be applied, when the length of operations and the amount of labour required for completion of a total job can be calculated. For example, the starting point of work study technique in a manufacturing company could be the production budget, translated into the volumes of products to be sold for the company as a whole. Volumes of output for individual departments could also be the starting point of work measurement technique. Forecasting Manpower Demand by work study technique can be done by: Work-Load Analysis Work-Force Analysis Job Analysis

Work-load Analysis:

Work-load Analysis is a suitable technique when the estimated work-load is easily measurable. Workload Analysis comprises of a series of processes to calculate the workload of a position, sub position as well as the number of people required to fill that position and sub position. It calculates exactly how many employees are required to complete all the tasks in a section or in a department. This method estimates total production and activities for a specific period of time in future. This information is then converted into number of man-hours required to produce per unit taking into consideration the capability of the workforces. The estimated work-loads are translated into number of man-hours on the basis of the past-experience of the management. Thus, work load analysis calculates future demand of human resources on the basis of estimated total production and the contribution of each employee in producing each unit of items. Both quantitative and qualitative techniques are utilized for accurate results. The example of this

technique is given below. For example if the estimated production of an organisation is 1, 50, 000 units. The standard man-hours required to produce each unit are 2 hours and the work ability of each employee as calculated by the past experience is 1500 man hours per annum. The work-load and demand of human resources can be calculated as follows: Estimated total annual production = 1, 50, 000 units Standard man-hours needed to produce each unit = 2 hrs Estimated man-hours needed to meet estimated annual production (i x ii) = 300000 hrs Work ability/contribution per employee in terms of man-hour = 1500 units Estimated no. of workers needed (iii / iv) = 3, 00, 000/1500 = 200 The above example clearly shows that 200 workers are needed for the year in order to produce 1, 50, 000 units. While calculating the future demand of human resources by Workload Analysis method, the rate of absenteeism, rate of labour turnover, resignations, deaths, machine break-down, strikes, pause, break and power-failure etc. are given due consideration. Work-Force Analysis Workforce Analysis is the foundation of workforce plan and determines the rate of influx and outflow of employees. Workforce Analysis provides sufficient margin for absenteeism, labour turnover and idle time for the completion of the total job at hand undertaken by an organization on the basis of past experiences. The organization needs to make reasonable prediction of labour turnover or absenteeism. However, if the actual labour turnover or absenteeism exceeds the predicted value, then it puts the business under loss. Therefore the Workforce Analysis has to be done with a lot of caution by experienced persons with validation of past periods data. Any seasonal variations and special events that are likely to occur need to be incorporated for the predicted period in order to ensure a

realistic demand forecasts. Moreover, a reasonable degree of buffer must be built in while doing workforce analysis in order to sustain any deviations.

Job Analysis

In addition to Work Load Analysis and Workforce Analysis, Job Analysis too facilitates manpower demand forecasting. Job analysis data provides the abilities or required skills to do the jobs efficiently. It involves a detail study of jobs to identify the qualifications and experiences required for optimal performance of it. Broadly, Job Analysis is bifurcated into job Description and job Specification. Job Description states the fact of the duties and responsibilities entrusted with specific job. It entails, what is to be done and how it is to be done as well as why it is to be done. Job Specification gives necessary information on human attributes in terms of education, skills, aptitudes and experiences that are required to perform a job effectively.

Ratio-Trend Analysis:

Ratio trend analysis compares the number of employees to a workload index. It incorporates certain business factors (units produced, revenues) and productivity ratio (employees per unit produced). The ratio of production level and number of available workers is the basis of estimation of manpower demand. This is one of the quickest forecasting techniques. The technique involves studying past ratios between the number of workers and sales in an organisation and forecasting future ratios. This ratio is used to estimate future manpower demand. It does not take into account technological development, the local conditions or any other variables that may be detrimental to productivity. For example

= 80, 000 units
Estimated no. of workers needed (On the basis of ratio-trend of 1: 200) will be = 400

Econometrics Models:

Econometrics models use various mathematical and statistical techniques for estimating future demand. These models consider sales, production volume, work-load etc, as independent variables and human resource requirements are taken as dependent variable. Using these models, relationship is established between the dependent variable to be predicted and the independent variables. Thereby estimated demand of human resources can be predicted.

SIMPLE LINEAR REGRESSION ANALYSIS: Simplest statistical technique. Projects the future manpower demand based on the past relationship with the workforce level and basic factor on which the demand is assumed to depend.

MULTIPLE LINEAR REGRESSION ANALYSIS: Deals with number of factors on which manpower demand is based. It estimates various characteristics of the workforce in order to derive the required number to fill the projected output.

Time series method of forecasting A time series consist of chronological sequence of observations on a particular variable. Usually a time series observations are taken at regular intervals such as days, months and years. But the observations could be irregular too. Time-series methods of forecasting makes forecast basing upon historical patterns in the data. This method considers time as independent variable to estimate demand. In a time series observation, measurements are taken at successive points or over successive periods. The observation may be taken on the basis of hour, daily, weekly, monthly, or annually. It could be at any other regular or irregular interval too. A first step in using time-series approach is to gather

historical data. The historical data is presumed as the representative of the expected conditions in the future. Time-series models can be effective forecasting tools, if past demand has shown a consistent pattern of behaviour and is expected to recur in the future. Time series models are characterized of four components: Trend component Cyclical component Seasonal component Irregular component Trend is the 'long term' movement in a time series data and considered as one important element of time series model. Although times series display trend, some data points fall above or below trend line. Any recurring sequence of data points above and below the trend line that continue for more than a year is considered to constitute the cyclical component of the time series data. These observations are deviations from the time series trend and caused due to fluctuations. Gross Domestic Product (GDP) data shows a very predominant cyclical behaviour. Seasonal component of the time series data captures the variability in the data point that occurs due to seasonal fluctuations. The effects of seasonal component of a time series data are reasonably stable with respect to timing, direction and magnitude. It is similar to the cyclical component in the sense that both occur due to some regular fluctuations in a time series. Seasonal components of time series data capture the regular pattern of variability that happen within one-year period. The sales figures of seasonal commodities like air conditioner, refrigerator during summer make up of seasonal component of time series data. The irregular component sometimes is also referred as the residual. It is what remains after the cyclical, seasonal and trend components of a time series data have been estimated and removed. Irregular component is the resultant effect that arises out of the short term fluctuations in the series which are neither

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systematic nor predictable. In a highly irregular series, these fluctuations can dominate time series movements by covering on the cyclical, trend and seasonality component. Random variations in times series is represented by the irregular component. Smoothing methods are considered to be appropriate when a time series displays no significant effects of trend, cyclical, or seasonal components. The objective here is to smooth out the irregular component of the time series by using an averaging process. The most commonly used smoothing technique is moving average method. In this method, the forecasting is done by averaging the last " x" number of observations, where " x" is some suitable number chosen by the planner. For example, if a forecaster is keen to generate three-period moving averages. The moving average method would use the average of the most recent three observations of data in the time series as the forecast for the next period. This forecasted value, in conjunction with the last two observations of the time series, would give an average forecasted value for the second forecast period in the future. The calculation of a three-period moving average is illustrated in following table. YearManpower /Data in nos. Forecasted Data in nosCalculation2008675

2009725

2010775

2011790730(675+725+775)/32012715(725+775+730)/32013

740(775+730+715)/3Example: Three-period moving averagesIn moving

average method of forecasting, the forecaster may experiment with

different-length moving averages. The forecaster will choose the length that

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yields the highest accuracy of the forecasted value. Weighted average method is a variant of moving average approach. In the sense, in case of moving average method, each observation of data has the same weight. Whereas, in case of the weighted average method, different weights are assigned to different observations on data while calculating the moving averages. For example, suppose again a forecaster wants to generate three-period moving averages. While calculating the average, under the weighted average method, the three data points would be assigned with different weights. Generally, maximum weight is assigned to the most recent observation and the older data receives less weight.

Year Actual manpower
Data in noForecastedCalculation2008675*(1. 2)

2009725*(1. 3)

2010775(1. 5)

2011790734(675*1. 2+725*1. 3+775*1. 5)/42012750(725*1. 3+775*1.

5+734*1. 5)/4. 32013753(775*1. 5+734*1. 5+750*1. 7)/4. 7Example:

Weighted three-period moving averages method
Exponential smoothing is a complex form of weighted average method. In this method, the weights fall off exponentially with the age of data. Exponential smoothing method uses the previous period's forecast and adjusts it with a predetermined smoothing constant, α (alpha) for future forecasts. The value of alpha is less than one. Alpha (α) multiplied by the difference in the previous period forecasted demand and the actual demand is called forecast error. Exponential smoothing is mathematically represented as follows: New forecast = previous forecast + alpha (actual previous demand – previous forecast)
 $F_m = F_{t-1} + \alpha (A_{t-1} - F_{t-1})$
 $F_m = \text{Forecasted manpower}$
 $F_{t-1} = \text{forecasted}$

demand for the previous period $\alpha =$ Smoothing constant $At-1 =$ Actual
manpower demand for the previous period Year Actual manpower Data in
noForecastedCalculation2008675

2009725

2010775

20117907342012779790+ 0.8(790-734)2012(double)789790+0.8(790-

779)Example: Exponential smoothing methodThere are also other methods

of time-series forecasting. They could be forecasting using trend projection,

forecasting using trend and seasonal components and causal method of

forecasting. Trend projection method captures the underlying long-term

factors of trend of time series data to forecast its future values. Trend and

seasonal components method try to capture both seasonal component as

well as the trend component of a time series data, while forecasting. Causal

method, while forecasting, studies the cause-and-effect relationship between

the variables whose future values are being forecasted in relation to other

related variables or factors. The widely known causal method is Regression

Analysis. This statistical technique is used to develop a mathematical model

showing how a set of variables are related and this mathematical

relationship is used to generate forecasts. There are more complex time-

series techniques like ARIMA (Auto-Regressive Moving Average) and Box-

Jenkins models. These techniques are heavier due to complex statistical

routines to cope with the data, data trends and the seasonality associated

with it. LIMITATIONS OF DEMAND FORECASTING USING QUANTITATIVE

TOOLSProductivity data is the base upon which manpower requirements is

considered. Whereas productivity rise cannot be attributable to increased

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human effort always. Increase in productivity may be due to changes in technology or the sum total of managerial and operational efficiency or some other factors which need to be considered while doing manpower forecasts. It is difficult to get units of output in the same form for all jobs. For example maintenance jobs, customer relationship job are difficult to quantify as these types of job are time independent. Relationship between output and manpower is not always straightforward. Rise in productivity may arise out of economies of scale and resultant cost efficiency, which may not be attributable to manpower productivity. Effect of factors like new technology adoption, incentive schemes etc to improve productivity may not be consistent over time. Therefore, projecting manpower requirement considering effect of such factors may be inaccurate. Effect of different factors may not always linear. Although availability of statistical techniques like multiple regression and factor analysis are there to deal with such complex data, interrelationship of different factors complicates forecasting of manpower. Uncertainty about the future is again a major problem for the manpower planner. Thus extrapolating on past data may lead to a major inaccuracy in manpower estimation. Data on past workload factors may not be available, creating difficulty in emulating the same. Integration of manpower planning with corporate plans may not exist in an organisation, creating problems for enterprise wide manpower plans. Employees cannot always be related to output in a direct way. Human resource information system (HRIS) may not exist in an organisation. Lack of proper information support system leads to inaccurate estimation of manpower.

QUALITATIVE DEMAND FORECASTING

Qualitative approaches to manpower forecasting are totally based on experiences of the experts and less statistical. It is subjective in nature and endeavours to reconcile the interests, abilities, and aspirations of individual employees with the present and future staffing needs of an organization. In both large and small organizations, HR planners may rely on experts who help in preparing manpower forecasts in anticipation of future manpower requirements. The followings are different types of qualitative Manpower Demand Forecasting.

Managerial Judgement:

Managerial judgement technique is very common approach to qualitative manpower demand forecasting. This technique is very simple. In this method, managers sit together and discuss to arrive at the future figure of manpower demand. Small and large scale organisations may resort to this approach. This technique involves two types of approaches. One is 'bottom-up approach' and the other is 'top-down approach'. Under the 'bottom-up approach', line managers request their departmental requirement of human resources to top management. Top management ultimately forecasts the human resource requirements for the overall organisation taking into consideration of the proposals of different departmental heads. Under the 'Top-down approach', top management forecasts the human resource requirements for various departments and for the entire organisation. Then this figure is sent to various departmental heads for their review and approval. Neither of these approaches forecasts accurately. A Participative Approach ' should be the approach for effective Demand Forecasting. Under

participatory approach, top management and departmental heads meet, discuss among each other and reach at a consensus to decide about the future human resource requirements for the department or for the organisation. Under this approach, demand of Human Resources can be forecasted with a sense of unanimity.

Delphi Technique

The development of Delphi method goes back to 1950s by the RAND Corporation, Santa Monica, California. The process starts with development of a set of open-ended questions on a specific issue. Then these questions are distributed to a preset panel of 'experts'. The responses of the experts to these questions are summarised and consolidated. Basing upon this a second set of questions is developed and distributed to the same group of 'experts' putting emphasis to clarify on the areas of agreement and disagreement. Delphi technique is subjective in approach. For this very reason it is often questioned by members of quantitative school. The objective of Delphi technique is to predict future by integrating independent opinion of experts. A major goal of Delphi technique is to avoid face to face confrontation of experts that may arise due to undue influence of some participants over others, resulting into compromise of relevant ideas. Delphi technique is facilitated by an intermediary, who provides the experts with a sequential series of questionnaires concerning the forecasting along with the controlled written feedback to each expert. During each round of written interrogation, each expert making forecast independently specifies the assumptions concerning the problem, identifies source materials that would be helpful in revising the estimated forecast. They are also provided with the

same kind of information developed by each of the other experts without mentioning their name. As the survey is conducted anonymously with the help of a questionnaire, nobody 'loses face' in this method. Generally, it is assumed that, the method makes better use of group interaction (Rowe et al. 1991) and the medium of interaction is questionnaire (Martino 1983). The Delphi Method "is effective in improving and clarifying the collective judgment of experts" (Cornish, pg. 67). Any expert around the world can be included in the Delphi Method (Cornish, pg. 67). The intermediaries gather data of requests of the experts and summarize them along with the experts answer to the primary questions. The developers of the Delphi argue that the procedures are more conducive to capture independent thoughts that gradually settle down to a considered opinion. Successive revisions of these procedures are continued until a composite forecast is obtained. These rounds of information and decision making provide each expert with an iterative or step by step feedback loop in which the experts receives successive rounds of reactions of others which may be helpful in providing a viable composite forecast. Such successive rounds usually result in the opinions of experts converging and thereby providing a viable composite forecast.

Advantages of Delphi Technique.

It does not require face-to-face meetings since Participants put their opinion in writing. Therefore any person across the globe can be member of Delphi. It is more convenient for the participants to put their responses. Individuals from diverse background work together on the same problems. It is relatively free from social pressure, personality influence, and individual dominance.

The procedure fosters independent thinking and gradual formulation of reliable judgments leading towards accurate forecasting results. This technique is also helpful in generating consensus out of the divergent opinions of hostile groups. It is also helpful to keep focus directly on the issue. It allows a broad range of views to be captured from a number of experts. It allows sharing of information among participants. Participants get a chance to review, re-evaluate, revise and modify all their previous statements in line with the compliments made by their peers because of the iteration and reiteration of the process.

Disadvantages of Delphi Technique:

Information is captured from a selected group of people and may not be the proper representative. Under this method extreme positions are always eliminated and participants choose a middle path in order to arrive at the consensus. This is an expensive technique and requires requisite skill in written communication. It necessitates adequate time and participants' commitment.

Nominal Group Method

Nominal group method is otherwise known as NGT technique. It is "a structured method of group brainstorming that encourages contributions from every member". Like Delphi method, Nominal Group Method also involves a panel of experts. However, the major difference between the two is that, under Delphi technique, experts are not allowed to discuss among themselves. Under nominal group method, experts join a conference table, independently list their ideas. While writing they are allowed to discuss among themselves to assess the questions. Under this method the co-
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ordinator assumes the role of a facilitator, allowing the experts to sit together and discuss their ideas. The records of such discussions are made on a flip chart. This process encourages the more passive group members to participate resulting in a set of prioritized solutions or recommendations. After this discussion, experts are asked to rank their ideas according to their perceived priority. The group consensus is then derived mathematically in terms of individual rankings. The process, therefore afford creativity and facilitate scientific group consensus as the coordinator ultimately decides the best course of action. As, there are advantages and disadvantages associated with any technique. Nominal Group Method is no exception. The most obvious advantage of this method is, it provides opportunities for equal participation of group members to respond to and clarify their ideas. As to disadvantages, opinions of experts may not converge, constraining cross-fertilization of ideas resulting into a mechanical process. Group Brain Storming: In this method a face to face discussion among a group of experts takes place. The discussion proceeds basing upon multiple assumptions about future business direction. This method generates lot of ideas but the major drawback of the method is that, many times it does not converge to conclusion. Simple Averaging: It is a method of simple averaging of viewpoints of a group of experts. The greater advantage of the method is that, it tries to include diverse view point of experts. But the disadvantage is that, extreme views are masked when averaged.

Other Techniques:

The other techniques of Human Resource demand forecasting are specified as under: Organisation-cum-succession-charts Estimation based on

techniques of production Estimation based on past records Stochastic method Bureks-Smith Model In this method a mathematical model is developed for personnel forecasting. $E_n = (Lagg + G)1/xY$ E_n - is estimated level of manpower demand in n planning periods Lagg- is overall turnover or aggregate level of current business activity in rupees during n period. G- is the total anticipated growth in business activity during period n in terms of rupees. X- is the average improvement in productivity Y- is conversion figure relating to today's overall activity

Computer Analysis/ MANPLAN Computer Analysis is otherwise known as MANPLAN. It was developed by " General Electric" to overcome Human Resource Modelling problems such as the overwhelming mathematical complexity of the data. Computer analysis can help in this direction. One final merit of MANPLAN is that running the computer model is relatively inexpensive. It also provides for ranges of possible human resource needs for any period.

BENEFITS OF MANPOWR DEMAND FORECASTING: The end-result is much relevant, if forecasting is accurate. An accurate forecast may increase the probability of achieving most of the organizational goals for the planning year by helping to identify risks, clarifying what needs to be done and setting fair expectations. The process of manpower forecasting makes the HR managers sensitive to change. It helps them to curtail their flamboyant decision on the manpower expenditure. Thereby helps in focusing more on achieving the business goals.

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SUMMARY Demand Forecasting makes use of the past information to identify future conditions. It provides in exact approximations rather than the

absolute results. While doing the complex task of Manpower Demand Forecasting, Human Resource Planner should include both quantitative and qualitative approaches. Combination of both the approach provides a more complete forecast, as both the approaches complement to each other. However, the best business plans change with the changes of the dynamics of the business. And no matter how well a planner incorporates and tries to capture various contributing factors, forecasting cannot be absolutely free from uncertainty and chance. Forecasts are not perfectly accurate. As the planning horizon becomes shorter, the accuracy of forecast increases. Therefore, Instead of focusing to forecast the precise number, the trends be studied and analysed rigorously, in order to have a clear understanding of the possible changes in the business and evolve an appropriate strategy to cope with the emerging challenge.

DISCUSSION QUESTIONS

What is Manpower Forecasting? Differentiate between projections, estimates and forecasts. Elaborate the need for Manpower Forecasts. Elaborate different types of Manpower Forecasts. Differentiate between Macro Forecasts and Micro Forecasts. Analyse Work Study technique of Manpower Demand Forecasting? Explain Time Series method of Manpower Demand Forecasting. What is qualitative method of Manpower Demand Forecasting? Write short notes on---Quantitative method of Forecasting Vs Qualitative Method of Forecasting

Ratio trend Analysis
Delphi Method
Nominal Group Method