2. Technology and Manpower Planning: A Conceptual Analysis
2. TECHNOLOGY AND MANPOWER PLANNING - A CONCEPTUAL ANALYSIS

2.1. CONCEPT OF MANPOWER

*If you wish to plan for a year sow seeds*

*If you wish to plan for ten years plant trees*

*If you wish to plan for a lifetime develop man*

*(Kaun Chung Tzu)*

"Manpower" or "human resource" may be thought of as "the total knowledge, skills, creative abilities, talents and aptitudes of an organization's work force, as well as the values, attitudes and benefits of an individual involved. It is the sum total of inherent abilities, acquired knowledge and skills represented by the talents and aptitudes of the employed persons." Of all the "M's." in management (i.e., the management of materials, machines, methods, money, motive power), the most important is "M" for men or human resources. It is the most valuable asset of an organization, and not the money or physical equipment. It is in fact an important economic resource, covering all human resources — organized or unorganized, employed or capable of employment, working at all levels - supervisors, executives, Government employees, "blue" and "white" collar workers, managerial, scientific, engineering, technical, skilled or unskilled persons, who are employed in creating, designing, developing, managing and operating productive and service enterprises, and other economic activities. Human resources are utilized to the maximum possible extent in order to achieve individual and organizational goals. An organization's performance and resulting productivity are directly proportional to the quantity and quality of it's human resources.

Organization of men for managing purpose is age-old problem even though the science of management is yet in a developing stage. Manpower is a primary resource without which other resources like money, material etc. cannot be put to use. Even a fully

automatic unit such as an unmanned satellite requires manpower to execute it and to plan further improvements/activities. That is why man learnt the use of manpower much before he learnt to use other resources.

2.2. DEFINITION OF MANPOWER PLANNING

"Manpower Planning" and "human resource" planning are synonymous. In the past, the phrase manpower planning was widely used; but now the emphasis is on human resource planning which is more broad-based. Manpower planning is "the process by which management determines how an organization should move from its current manpower position to its desired manpower position. Through planning, a management strives to have the right number and the right kinds of people at the right places, at the right time, to do things which result in both the organization and the individual receiving the maximum long-range benefit."

In order to achieve any goal, manpower requirement needs to be assessed, located and harnessed. Manpower planning is not only required but also their categories and skills as well as their balanced allocation is required. Improper planning may lead to either over-staffing not only increases direct cost (salary) but adversely affects cost of training housing amenities etc., besides production cost. Under-staffing also affects production morale and therefore, industrial relations. Optimum manpower planning therefore assumes importance. It should aim at:

- Avoiding imbalances in distribution or allocation of manpower.
- Controlling the cost aspect of human resources.
- Formulating transfer and succession policy.

* Wealth is the product of man's capacity to think.
  - Ayn Rand
Coleman has defined manpower planning as "the process of determining manpower requirements and the means for meeting those requirements in order to carry out the integrated plan of the organization."

Stainer defines manpower planning as "Strategy for the acquisition, utilization, improvement, and preservation of an enterprise's human resources. It relates to establishing job specifications or the quantitative requirements of jobs determining the number of personnel required and developing sources of manpower."

According to Wickstrom, manpower planning consists of a series of activities, viz.

a) Forecasting future manpower requirements, either in terms of mathematical projections of trends in the economic environment and development in industry, or in terms of judgmental estimates based upon the specific future plans of a company.

b) Making an inventory of present manpower resources and assessing the extent to which these resources are employed optimally.

c) Anticipating manpower problems by projecting present resources into the future and comparing them with the forecast of requirements to determine their adequacy, both quantitatively and qualitatively and

d) Planning the necessary programs of requirement, selection, training, development, utilization, transfer, promotion, motivation and compensation to ensure that future manpower requirements are properly met.

Thus, it will be noted that manpower planning consists in projecting future manpower requirements and developing manpower plans for the implementation of the projections. This planning cannot be rigid or static, it is amenable to modification, review and adjustments in accordance with the needs of an organization or the changing circumstances.

* Time is the fire in which we burn - Gene Roddenberry
2.3 OBJECTIVES OF MANPOWER PLANNING

Manpower planning fulfills individual, organizational and national goals but according to Sikula, "It's ultimate mission or purpose is to relate future human resources to future enterprise needs so as to maximize the future return on investment in human resources." 59 In effect, the main purpose is one of matching or fitting employee abilities to enterprise requirements, with an emphasis on future instead of present arrangements. 9 The objectives may be laid down for a short-term (i.e. for one year). For example, the short-term objective may be to hire 25 persons from Scheduled Tribes or Backward Class for purposes of training. The long term objective may be to start a new industry, to expand the market, to produce a new product, to develop its own sales force rather than depend on distributors, or to have minority group members eventually in position of middle and upper management cadres.

2.3.1 ESTIMATING THE FUTURE ORGANIZATIONAL STRUCTURE OF FORECASTING THE MANPOWER REQUIREMENTS

The management must estimate the structure of the organization at a given point in time. For this estimate, the number and type of employees needed have to be determined. Many environmental factors affect the design and structural changes such as management philosophy, government policy, product and human skills mix, and competition.

Forecasting provides the basic premises on which the manpower planning is built. Forecasting is necessary for various reasons, such as:

(a) The eventualities and contingencies of general economic business cycles (such as inflation, wages, prices, costs and raw material supplies) have an influence on the short-range and long-run plans of all organization.

59. Management International Review Vol. 8 No.4,5,1968, pp 104-114
9. Core Arne - "Personal Planning: Objective and Methods Presentation of Integration System"
(b) An expansion following enlargement and growth in business involves the use of additional machinery and personnel, and a reallocation of facilities, all of which call for advance planning of human resources.

(c) Changes in management philosophies and leadership styles.

(d) The use of mechanical technology (such as the introduction of automatic controls, or the mechanization of materials handling functions) necessitate changes in the skills of workers, as well as a change in the number of employees needed.

(e) Very often changes in the quantity or quality of products or services require a change in the organization structure. Plans have to be made for this purpose as well.

2. 3.2 NEED FOR MANPOWER PLANNING

Manpower planning is needed wherever production of goods and services is involved. It is an important factor of labour productivity and profitability of the enterprise. In an industrial undertaking this is done very carefully either by:

1) **External Agencies** such as professional consultants and suppliers of plant and machineries for they have the knowledge of working of similar units. It is done generally in the initial stages or when internal agencies do not have the required expertise for manpower planning.

2) **Internal Agencies** such as the personnel department, are associated as all these agencies are interested in production, productivity, industrial relations and other aspects of manpower planning.

Manpower planning is needed for all organizations for one or the other of the following reasons:

(i) To carry out its work, each organization needs personnel with the necessary qualifications, skills, knowledge, work experience and aptitude for work. These are provided through effective manpower planning.

*Man is creation of desire, not of need*  
- Gaston Bachelard.
(ii) Since a large number of persons have to be replaced who have grown old, or who had been retired, die or became incapacitated because of physical or mental ailments, there is a constant need for replacing such personnel. Otherwise, the work would suffer.

(iii) Manpower planning is essential because of frequent labour turnover which is unavoidable and even beneficial because it arises from factors which are socially and economically sound such as voluntary quits, discharges, marriage, promotions or factors such as seasonal and cyclical fluctuations in business which cause a constant ebb and flow in the work force in many organizations.

(iv) In order to meet the needs of expansion programs (which become necessary because of increase in the demand for goods and services due to growing population, rising standard of living - which calls for larger quantities of the same goods and services as also for new goods; the competitive position of a firm which brings it more business arising from improvements effected in the slump period and the rate of growth of the organization), human resource planning is unavoidable.

(v) The nature of the present work force in relation to its changing needs also necessitates the recruitment of new labour. To meet the challenge of a new and changing technology and new techniques of production, existing employees need to be trained or new blood injected in an organization.

(vi) Manpower planning is also needed in order to identify areas of surplus personnel or areas in which there is a shortage of personnel. If there is a surplus, it can be redeveloped and if there is shortage, it may be made good.

The objective of manpower planning is to maintain and improve the organization's ability to achieve its goal by developing strategies that will result in optimum contribution of human resources. For this purpose, Stainer recommends the following nine strategies for the manpower planners

(a) They should collect, maintain and interpret relevant information regarding human resources.

* Effectiveness areas should not reflect an intent to safe guard resources to optimise resource allocation.

- W. J. Reddin

(2.6)
(b) They should report periodically manpower objectives, requirements and existing employment and allied features of manpower.

(c) They should develop procedures and techniques to determine the requirements of different types of manpower over a period of time from the standpoint of organization’s goals.

(d) They should develop measures of manpower utilization as component of forecasts of manpower requirements along with independent validation.

(e) They should employ suitable techniques leading to effective allocation of work with a view to improving manpower utilization.

(f) They should conduct research to determine factors hampering the contribution of the individuals and groups to the organization with a view to modifying or removing these handicaps.

(g) They should develop and employ methods of economic assessment of human resources reflecting it’s features as income-generator and cost and accordingly improving the quality of decisions affecting the manpower.

(h) They should evaluate the procurement, promotion and retention of the effective human resources and

(i) They should analyze the dynamic process of recruitment, promotion and loss to the organization and control these processes with a view to maximising individual and group performance without involving high cost.

Manpower planning is practically useful at different levels, as stated by Narayanrao. According to him:

(i) At the national level, it is generally done by the Government and covers items like population projections, program of economic development, educational facilities, occupational distribution and growth, industrial and geographical mobility of person.

(ii) *At the sector level*, it may be done by the Government - Central or State - and may cover manpower needs of agricultural, industrial and service sector.

(iii) *At the industry level*, it may cover manpower forecast for specific industries, such as engineering, heavy industries, consumer goods industries, public utility industries, etc.

(iv) *At the level of the individual unit*, it may relate to its manpower needs for various departments and for various types of personnel.

### 2.3.3 Various Factors that Influence the Determination of Manpower Requirements Are –

#### 2.3.3.1 Layout

Where an equipment works in isolation (say a drill or lathe) but where continuous supervision is necessary (say by excavators, etc.) One man per machine is essential. When a group of machines works in unison, the whole group may be attended to by one or more persons. If equipments are not in continuous operation, one person may look after more than one equipment.

#### 2.3.3.2 Requirements

There are certain positions in mines, electrical installations, hazardous places where welfare amenities have to be provided as per statutory regulations. First aid posts, creches, etc., fall under this category.

#### 2.3.3.3 Shifts

The manpower requirements would be determined by the number of shifts in which work is to be carried out - whether in a general shift or in combined shifts. Once the number of persons per shift has been determined, this will be multiplied by the number of working shifts. When work goes on round the clock, manpower has to be provided for all the shifts.

* Individual are occasionally guided by reason, crowds never.
2.3.3.4 LEAVE RESERVE

For manpower requirements as worked out, certain allowances have to be made as human beings cannot work on all days of the year. They have to be allowed regular leave for certain periods in a year depending on the legislation or mutual agreement between the unions and the management on the basis of leave availed of during the study period. A certain percentage towards leave reserves is added to arrive at the required manpower.

2.4. PROCESS OF MANPOWER PLANNING

The process of human resource planning is one of the most crucial, complex and continuing managerial functions which, according to the Tata Electrical Locomotive Company, "Embraces organization development, management development, career planning and succession planning." The process has gained importance in India with the increase in the size of business enterprises, complex production technology, and the adoption of professional management techniques. It may be rightly regarded as a multi-step process, including various issues, such as:

(A) Deciding goals or objectives.
(B) Estimating future organizational structure and manpower requirements.
(C) Auditing human resources.
(D) Planning job requirements and job descriptions and
(E) Developing a human resource plan.

After estimating what the future organization structure should be, the next step is to draw up the requirements of human resources, both the existing departments and for new vacancies. For this purpose, a forecast of labour force is needed, and requisitions should be obtained from different departments.

* Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.

- By Albert Einstein

(2.9)
2.1. : HUMAN RESOURCE PLANNING SYSTEM
Forecast has to be made in returns of functional category, the members needed, and the levels at which they are required. Vacancies, occurring in any department, should be notified in writing by different department heads to the personnel department, stating clearly the number of vacancies to be filled, job or category-wise, types of personnel needed, their technical qualifications and experience, and the reasons for acquisition (i.e., whether for replacement or addition), a statement of duties, types of jobs, pay scales, age, and previous experience should also be made. Requisitions should be based on accurate job specifications by first line supervisors. They should, as far as possible, be clear-cut about the exact demands of a job.

In determining the requirements of human resources, the expected losses which are likely to occur through labour turnover - quits, retirement, death, transfers, promotions, demotions, dismissals, disability, resignations, lay-offs, and other separations - should be taken into account. Changes in the human quality resulting from the experience gained in the jobs during the period and the training achieved also need to be considered. The addition of new lines of production and new projects also influence the demand estimation of human resources.

The basic fact to remember is that the human resource in an organization constantly changes in terms of its present and future size. Additional human resources are gained through new employment of personnel, promotions, through transfers and demotions; but personnel is lost through voluntary quits, death, dismissals, terminations and retirements.

After making adjustments for wastage, anticipated and expected losses and separations, the real shortage or surplus may be found out. If a shortage is there, efforts are made to meet it either by new recruitment or promotion from within, or by developing the existing staff. If there is a surplus, it is to be decided how it will be dealt with, i.e., whether there should be transfers, lay-offs, retrenchment or reduction in the hours of work of all.

* Life is fragile. Handle with prayer.
Under estimation of the quality and number of the employees required would lead to shortfalls in performance, while overestimation would result in avoidable costs to the organization. According to Dr. Ram Tarneja, "management can ensure control of labour costs by avoiding both shortages and surpluses of manpower through proper manpower planning."^62

It may be noted that for purposes of manpower planning, the main dimensions to be taken into consideration are:

(i) The total number of personnel available, this could be obtained from the payrolls and other personnel records, such as the applications for employment. The total number has to be classified on some basis, such as manual workers (i.e., daily-rated, weekly-rated or monthly-rated) clerical employees, ministerial staff, managers and other executives, specialists and skilled and unskilled workers sex-wise distribution, etc.

(ii) The job-family, i.e., a detailed job-description for each position such as stenographers who may belong to various departments e.g., finance, marketing, personnel, public relations, general administration, etc.

(iii) Age distribution of the employees, available in the present department, say in the age-groups 20-29 years, 30-45 years, 46 years and above.

(iv) Qualification and experience desired, such as a person with 5 years 10 years experience in a particular branch/job and whether under-graduate, post-graduate, or MBAs or graduates in Science, Commerce, Arts, engineering or professional diploma holders, etc; or with specialised knowledge in the field of marketing, finance, computer programming or engineering work.

(v) The salary range, etc.

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^62. Industrial times, April 12, 1972, pp 215
2.5 MANPOWER - IT’S ROLE IN ECONOMY

The concept of Human Resource Development is quite modern and advance as compared to the earlier concept of manpower development. Since the beginning of civilization, the importance of manpower was realized by the Rulers, Governors and even by Tribe Leaders. It was known to them that the real strength of group or the kingdom lies in its manpower, that is the physical manpower, which is very important and therefore the rulers in those days emphasized on manpower development rather than on manpower expansion. These connotations continued till 17th century and so to win/concur different countries, province and territories. The kings and rulers encourages population expansion.

After the industrial revolution in 18th century the whole concept and approach towards manpower was changed. The emphasis shifted from near expansion of manpower to increasing qualitative and educated manpower. The term manpower was then referred in the context of skilled competent and technically educated manpower. The economic growth was automatically associated with availability of qualified and creative talent. Thus the concept of manpower shifted from near number or quantity to quality. The role of qualitative and high standard technical manpower cannot be neglected because -

All other resources except manpower is static in nature. The real growth comes only when the people, the quality manpower participates in economic activities and process of development. The importance of manpower from economic point of view can be enlisted as follows -

1. No country can advance without sufficient and suitable manpower
2. Quality manpower helps to utilize natural resources in the efficient manner.
3. Limited manpower or paucity of manpower restricts assimilation of growth rate
4. Every natural, manmade resources cannot put to effective use unless and until there is sufficient supply of quality and skilled manpower

* Happiness is the sense that one matters
5. The process of innovation, research and technical advancement and experience needs a good band of technical manpower.

6. Sufficient technical manpower only helps in converting dormant resources into useful products as well as to improve the standard of living.

7. The growth rate, development indices are all linked with quality of manpower and it’s utilization.

8. The modern concept of human development index is much linked with educational, cultural and technical advancement of manpower in the society.

2.6 TECHNICAL EDUCATION - A CORE CONCEPT TO IMPROVEMENT OF MANPOWER

Alvin Toffler, in his book The Third Wave, talked about three waves:

* The first wave: the agricultural society till the 17th century, during this wave, work was done without machines.

* The second wave: the industrial society till the end of world war II, there was much reliance on machines.

* The third wave: the scientific-technological society; the emphasis is on thinking.

During the scientific-technological stage or the third wave society is highly mechanized, less manpower is required. There is a new equation on the relationship between man and machine. The thinking man makes machines do the work that he used to do earlier. Science explains the laws, principles, properties, logical processes etc. of a phenomenon. It is foundation for any application which is Technology. Technology is defined as “human knowledge applied to the solution of existential and practical problems”. Technology increases efficiency in any area where it is applied with less human physical efforts, which leads to more and better output is achieved.

The technological revolution in general and the launching of the Sputnik in particular made educationalists think about the role of education vis-a-vis science and technology. The quality of life would depend on human development and the thinking of each individual. Modern educational thinkers have talked about the science of learning. Piaget outlined the principles of cognitive development in students to

1) Discover the general from the particular
2) Maintain the continuity from Kindergarten to University.
3) Teach according to the stage of cognitive development.
4) Establish a close connection between theory and practice.
5) Base learning on internal motivation and
6) Consider the intuitive knowledge of the pupil.

Then, Jerome Burner, the educational thinker, reiterated what Piaget said and called for establishing and clarifying -

1) The structure of the discipline
2) The cognitive development of students
3) The role of intuition in learning and
4) The importance of motivation in learning.

2.7. IMPACT OF TECHNOLOGY

Modern society is characterized by rapid developments especially in technology. An educational system that aims to prepare the learner for life in such a society has to adapt its curriculum to include technology as a vital field of knowledge. Alvin Toffler, in an earlier book Future Shock, states that the metaphor to relate technology to machine has been unsuitable and even erroneous since technology is always more than factories and machines. Technology can be seen as human competencies and talents utilized to overcome human biological restrictions, by extending human abilities. Today's youngsters will be

* We must learn to make the knowledge productive.  - Peter F. Drucker
better adapted to live in a technological world if they are able to utilize existing technology rationally and efficiently and plan ahead for new technologies. Understanding the nature of technology and its impact on human life is essential for the development of curriculum for all stages of education.

In facing educational challenges, educators should not be blocked by past and present circumstances in initiating, developing and implementing new curricula to meet modern life needs. Pupils need not undergo all the routes and learning experiences that their teachers have undergone. It is not a question of merely updating contents. It is more a concern of changing pedagogical approaches in the direction of nurturing student's open-ended thinking, self-esteem and human beings responsibility to themselves, to society and environment. This change in approach should permit the entire schooling period from class 1 onwards since it is not genetically inherited but a learned one, acquired by human beings through formal/pre-designed and informal/spontaneous activities and interactions with the environment.

In recent years many developed and developing countries have realized the crucial role played by “technology literacy” in social and economic growth. This is considered to be the main reason for the rise of the “Technology curriculum movement” resulting in massive introduction of technology-study programs for all student population ages. It is during childhood and teen-age periods when the seeds are sown for scientific and engineering studies. Such a movement is especially valid in countries that are disadvantaged and have minimal access to modern technology environment.

2.8 TECHNICAL MANPOWER AND ECONOMIC DEVELOPMENT

There are no two opinions about the fact that the real architects of economic development are Scientists, Technicians and the Economic managers. It is often possible to import technically competent manpower. The real growth of a country is possible

* The Future is the past in preparation - Pierre Dac

(2.16)
only when a country has sufficient supply of its own technical manpower. The role of technical manpower in economic development can be put forward as follows -

a. Technical manpower is only the dynamic resource of economy.

b. All resources of growth and advancement but technical manpower are static. Hence without appropriate development of technical manpower the real economic growth is not possible. The process of planning, organizing & restructuring of economy depends totally on how effectively technical manpower is put to use and how the technical manpower is implementing the proposed plan.

c. The real creative talent in the country is technical manpower. They can innovate, improve and offer a new dimensions to the economy by effectively utilizing scarce resources by forming out new avenues of development as well as by introducing new mechanisms of development.

2.8.1 SKILLED AND TECHNICAL MANPOWER - IT’S IMPORTANCE IN INDIAN ECONOMY

Manpower and employment planning is an integral part of development planning. Development of Human Resource is a function of well knit educational and training system. With the advancement of technology, now-a-days, no one can think of achieving economic development without the contribution of technical education and skills.

The contribution of Scientific and technical manpower to the country’s economic growth and development is well known. It is through the utilization of scientific and technical manpower in the productive activities and the incorporation of the latest technological advancements that economic development and growth can be achieved. Technical manpower is developed by a large number of technical education institutions. Any shortage of facilities for technical education will have it’s adverse impact on the industrial development. On the other hand, if there is over-production of these categories of manpower without regard to the absorption capacity of the economy it will result in

* Science clear the fields on which technology can build. - Werner Heisenberg.
unemployment. Such situations will lead to many social and economic problems. Prior to independence there were not much facilities for technical education in the country and, therefore, supply of technical manpower was very low. The problem of supply was tackled in the post-independence period which witnessed a rapid industrialization by expanding technical education facilities. Several engineering educational institutions were accordingly set up in different plan periods for meeting the need of engineering personal arising out of expansion and diversification of industrial activities.

It is in the above context that a proper assessment of the demand for and supply of such category of technical manpower for a reasonable time in the future becomes essential. Such an assessment would enable the authorities to identify gaps between the demand and supply positions of various categories of technical manpower and take suitable actions in advance. Many new disciplines in the recent past and their importance is increasing every day as the new industrial development is requiring them in ever increasing number.

In order to meet the requirements of industrial activities which are poised for technology adoption, diffusion, absorption and innovation in a significant way one cannot over-look the importance of non-conventional disciplines which may appear as minor in terms of number currently but might expected to be in greater demand in the near future.

2.9. PRESENT SCENARIO OF TECHNOCRATS IN INDIA

Industrial landscape of India has undergone many interesting developments especially since 1991, prior to that it was protected economic dispensation which is transformed to a liberalized or partially liberalized set-up. It has brought out radical changes in general working of industries. It had also set changes in the mindset of industrialists and controllers and thus the industries are coming out of protectionist syndrome. The economic activities presupposes clear cut interlinkages to Agriculture and has to ensure, apart from food

* Try to fix the mistake - not the blame.
and occupation to the people, a steady supply to industry. Industry has to produce more efficiently quality goods and also at reasonable prices and service sector should distribute the goods more effectively. India’s economic reforms stand in bold belief as an attempt to lift the Nation from morass. The series of liberalization measures, both domestic and external, is widely believed, to help in effecting the transition of state oriented, upward looking protected economy into a market friendly and competitive type of economy. Opening of economy to rigors of international market, will enable to embed competitive culture and enforce it to tone up it’s internal economy to take measure in terms of cost, quality and technology.

Rajeswari 74 (1995) while discussing the supply and deployment of engineering manpower and their overall contribution in the industrial and economic development of India had highlighted among other things the employment of engineers by branch and the main activity in 1983-84. She had pointed out that while most of the engineering degree holders out of the total stock, roughly 90% degree holders were employed, maximum number of them were performing technical functions in the fields like manufacturing and construction activities. As per the data included in the study for the year 1983-84, 1.78% of the total stock of engineering degree holders were in the teaching profession. Majority from above were from the disciplines like Civil, Mechanical and Electrical Engineering, the percentage of engineers from other disciplines was very negligible. According to Rajeswari, the increase in technical manpower has not made an appreciable impact on India’s industrial and economic development and hence there is a need to make in depth studies on the impact of technical manpower on the industrial sector by going into the details of their employment characteristics, technology status, skill requirements etc., so that the technical manpower potential could be exploited towards national development.

Sen (1987) while tracing the history of development of technical education right from the eighteenth century, has analysed the Indian scenario in detail with regard to the critical issues, major policy initiatives & reforms pertaining to technical education before and after independence. According to him, the reforms and measures in the pre-independence days could not yield any substantial improvement in technical education. After Independence, greater emphasis was laid in India on quantitative expansion of trained manpower since it was the only alternative available in the situation of paucity of funds. With this approach, shortage of specialised trained manpower was met by arranging training of technical personnel by crash programs either in India or abroad. This policy, according to him, left a vacuum in the qualitative improvement of technical education and thus affected the research and development. Sen had suggested that a critical analysis of the Indian experiences in the field of technical education may be a useful guide to many developing countries for working out and appropriate strategy for developing human resources.

2.10 CONTEMPORARY POSITION OF TECHNOCRATS IN MAHARASHTRA STATE

Maharashtra State being a premier state on the industrial map of India and having a sound administrative base, natural resources and large volume of technical manpower cannot afford to lag behind in the changing micro-economic scenario. Keeping in conformity with national policy, the Government of Maharashtra also revised its industrial policy. This policy has considered all aspects to accelerate the pace of industrialization in this state developed more responsibilities in various departments/organizations like -

1. Development Commissioner (Industries)
2. State Industrial Investment Corporation (SICOM)
3. Maharashtra Industries Development Corporation (MIDC)
4. Maharashtra State Financial Corporation (MSFC) etc.

The Maharashtra Industries Development Corporation and the Development Commissioner (Industries) have been entrusted with responsibilities of developing Industrial areas in addition to modernization of infrastructural facilities in existing industrial areas, the Government of Maharashtra further reviewed the overall strategy and come out with a “New Industrial Trade and Commerce policy for Maharashtra” in 1995. This new Industrial policy enlightens on various facets of economy. It has lent a strong support to liberalization, infrastructure development, private Sector participation. It firmly believes that good infrastructure is almost essential for proper development not only for rapid growth of industries but also for enabling people to realize their full potential. It is felt by the Government of Maharashtra that time has come to properly leverage Maharashtra’s strengths for a faster and accelerated growth. It has, therefore, decided to create excellent infrastructure (Five Star facilities) in nine different locations in the state.

These locations are 1. Butibori (Nagpur) 2. Nandgoan Peth (Amravati) 3. Walunj Shendre (Aurangabad) 4. Kushnoor (Nanded) 5. Sinnar (Nasik) 6. Kagal-Hatkangale (Kolhapur) 7. Mahad (Raigad) 8. Nihali Phata (Ratnagiri) 9. Indapur (Pune). The Industrial areas of these township will range from 2000 hectares to 7000 hectares. All soft and hard core infrastructure will be provided while planning these industrial estates, private sector participation is most welcome in these areas.

In short the Government has adopted a polynucleated pattern of growth of industries covering industrially backward regions. As a result of a ‘New Industrial Policy’ the Government has attracted over 1500 Mega Industries since July 1991 to June 1995. The Government is further stepping up its efforts to attract more and more industries in coming years.

* Some minds are like concrete - all mixed up and permanently set.
It is an accepted philosophy that Education through knowledge, skills, development of values and changes of attitudes, provides strength to the people. It broadens, their views to respond to the changing situation and enables them to respond and contribute positively to the Socio economic development, thereby improving quality of life. In order to satisfy the needs of the society, planning is necessary. In case of technical education it is imperative to match the demand and supply position, in order to remove mismatch between these two factors, it is quite essential to adopt a strategic planning method to narrow down the gap between the two.

As a result of new industrial policy, in view of massive investment and new upcoming industries, it is necessary to study the demand and supply positions of technical persons which will be required by these upcoming industries, usually supply is to be prepared in advanced hence strategic planning becomes an integral process especially in Technical Education, which in turn helps not only to administrators, technical educational planners but also to society at large. The Government of Maharashtra through Directorate of Technical Education has established a series of institutions imparting technical education. These are Government, Government aided and self financing institutions impart instruction not only in conventional courses but also in other diversified fields keeping in view future industrial development in Maharashtra. It has become imperative to study requirement of all new upcoming industries.

A well known Japanese consultancy agency has studied all facts of Industrial development in 15 major states in India and zeroed down to Maharashtra, starting that Maharashtra has excellent facilities amongst all 15 states studied by the said, Consultancy Agency, this clearly indicates that more and more industries with new technologies will be attracted towards Maharashtra. This has necessitated to undertake a detailed study of requirements of technical manpower to meet demands of upcoming industries.

* WITHIN our dreams and aspirations we fired our opportunities.