

QUALITATIVE AND QUANTITATIVE REQUIREMENT OF ELECTRONIC MANPOWER

* N.R.Dongre

INTRODUCTION :

Electronics Industry one of the "Sun Rise" industrial sectors of Indian industrial revolution is marching fast to catch up the production targets of Rs. 30,000 crores by the year 1994-95 and Rs.75,000 crores by 2000 AD. During the Eighties the production growth achieved by the industry varied from 40% to 35% with an average of 32% annually. However, the production growth has reduced to the lowest figure of 10.7% during the terminal year drawing concern of each and every one involved in this industrial sector.

To meet the challenges of plan targets, Department of Electronics has constituted a separate division for developing suitable

manpower. Numerous promotional activities and financial support provided by DOE to various educational and vocational institutions have helped in developing suitable manpower.

SOURCES OF MANPOWER :

During the study conducted by MITCON, we have tried to estimate the availability of manpower with electronics background and its distribution in various sectors i.e. Electronic Industry, Non-electronic Industry, Service sector, Govt. Departments including R & D laboratories and educational institutions. The qualification wise breakup of this manpower during the year 1990 is given in Table - 1.

Table - 1
Qualification-wise Distribution Of Electronics Manpower

Qualification	Electronic Industry	Other Industries	Govt. Dept.	Educational Institutes	Total
Ph.D.	308	32	403	750	1493
M.Tech	5265	643	5919	3200	15027
B.Tech	20187	1607	85527	3800	111121
Msc./MCA	4777	482	14899	650	20808
PG. Diploma	2989	321	67659	400	71369
Diploma	19655	2893	139735	2100	164383
B.Sc.	6920	1607	43157	----	51684
ITI	35556	5786	103816	1100	146258
Certificate & others	39111	4629	26865	----	70625
	134768	18000	488000	12000	652768

In addition a sizable manpower is employed in service sector. Based on the survey carried out, the total requirement of electronics background manpower and the specific requirement of industry are given in table -2

Table - 2

Future Requirement Of Electronic Manpower

(in Lakhs)

Year	Total Manpower	Industry Need
1990	8.92	1.35
1995	14.42	1.98
2000	19.90	3.00

From the above two tables, it is seen that majority of the manpower is employed in the government and services sectors.

YEARLY OUTTURN :

About 300 Engineering Colleges, 850 Polytechnics and 1800 ITIs produce 78,000 qualified electronics manpower every year. In addition, with the effort of DOE about 20,000 manpower is being trained in the areas of software and hardware of computer. Such a large quantity of manpower coming out of the organisations has no immediate outfits for direct employment. The requirement of industry is very negligible and hence the manpower has to be employed either by the Government Departments or the individual business outfits (service and consultancy sectors). Since the quantity of manpower available is not a constraint for the development of the industry one should look at the qualitative requirements of the manpower.

QUALITATIVE REQUIREMENTS :

The qualitative requirement of the manpower varies at different level as per he user requirement. From the data collected

during the study, it was found that the requirements of various Government departments and Laboratories are specified in general terms. For example the advertisements given by UPSC for a scientist post calls for applications from candidates with qualifications of MSc. to Ph.D with varied number of years of experience in a general field. Most of the time, the work done by him may not relate to his experience / qualification. Due to this factor, the study has observed all over satisfaction from the users of Government Departments about the suitability of manpower available from various educational institutes. The manpower used in the industry forms a very small percentage of the total employment. Teaching, Research and Government Departments feel that the present Education system meets their requirements generally.

The expectations of the industry are at very high level and are not happy with the situation. Technological obsolescence connected with the industry envisages a JUST IN TIME type manpower for their need. This is highly difficult to provide by the educational system followed in the country.

When we look at the advertisements appearing in various newspapers and magazines, there is a huge demand for manpower with experience capable of handling particular jobs in production, marketing and general administration. The success of an industrial unit depends on the proper management of technology, market, people and finance. A Technocrat coming out of educational institutes is lacking in variety of above expertise and become most of the time a misfit in the JUST IN TIME culture. This is the reason for having the shortage of suitable trained quality manpower even when quantity-wise the manpower is abundant.

PROBLEMS OF ACADEMIC INSTITUTIONS :

The infrastructure of many educational institutions are very much limited and hence can not cope up to meet the requirements of fast technological upgradation. The syllabus is not changed very often due to non availability of suitable staff at various levels. During the survey it was observed that 60% of the work force used by the industry are from lower rank i.e. from technician grades provided by polytechnics, ITIs and other private institutions. The staff employed by these organisations are not highly qualified and have not much exposure to the industrial atmosphere. All quality improvement programmes for teachers are addressed to graduate and post graduate levels meeting the requirements of engineering colleges and regional engineering colleges. These courses are aiming only to increase the qualification of the person by providing a higher degree (M.Tech or Ph.D.) and very little exposure to the industrial working. Due to this fact even though the attempts were made by Department of Electronics in providing suitable infrastructure at ITIs and Polytechnics, the effect of same was not

measurable. Training the staff of these organisations and providing facility for industrial interaction will be the main requirement for the development of manpower.

CONCLUSION :

Since it is seen that the shortage of manpower is not quantitative and only qualitative, the efforts should be to develop the skills and aptitudes of appropriate manpower. The educational system has already become an examination oriented type rather than knowledge based type, Changing the scenario will be difficult due to the size involved and the resources required for the same. Therefore, it is appropriate to consider the existing education system as a background material required by each individual to have a minimum basic qualification of electronics. Special centers like NTTF should cater the needs of industry by providing special tailor made training courses to the people working in industry or intend to take up jobs in industrial environment. Each organisation should develop inplant training programmes at various levels i.e. Engineers, technicians and operators.

* * * * *