ABSTRACT

The technology landscape has changed a lot in the last two decades. Now that the new millennium party is over, the trend for workers increasingly involves technology. Just as factories emerged as the basic building blocks for the industrial age, we are in the initial stages of the business infrastructure of the digital age.

Corporations use technology to economize on labor power and reduce costs. In their much acclaimed book, *The Machine that Changed the World*, Womack et al. (1990) state that just as mass production swept away craft production, a new way of making things, called ‘lean production’, is now rapidly making mass production obsolete. The authors’ worldwide study of the automotive industry showed that lean production welds the activities of everyone – from the top management to the line workers and suppliers - into a tightly integrated whole. This integrated unit can respond almost instantly to the demands of the customers. It is capable of doubling production and causing a twofold improvement in quality, while keeping the costs down. It is interesting to note however, that as different businesses compete with each other, the commercial advantage one can have over another may depend primarily on it's use of technologies.

On the one hand, even as the development of the technology sector promises to generate new employment by creating a demand for fresh skills
and new occupational categories that may not be readily available even in
developed countries, the deployment of new technologies in existing
industries creates challenges by transforming the organization of
production. Automating production displaces labor. Increased automation
leads to reduced need for labor as well as enhanced productivity. It is
normally observed that when capital investments in new technology are
found to be cheaper compared to employment of labor, firms substitute new
technology for labor. The substitution gives rise to work and/or worker
redundancy. Although, work and worker redundancy arises due to a number
of factors such as outsourcing manpower, off-loading production, and
regular downsizing, new technology is one of these important factors.

The topic of the present study is Management of Work and Worker
Redundancy in Technology Intensive Industries.

The research objectives of the present study are:

1) To study the nature of change and period when redundancy
   program was carried out.

2) To study whether insourcing has taken place leading to job
   increase.

3) To study work redundancy due to technological change

4) To study worker redundancy due to technological change.
5) To compare work redundancy among different units of the organizations taken up for the study.

6) To compare worker redundancy among different units of the organizations taken up for the study.

7) To study the rate of work redundancy for different types of jobs.

8) To study the rate of worker redundancy for different workers having various skill levels.

9) To study the adjustment mechanisms employed by organizations to deal with redundancy.

10) To study the implications of technological change on future employment.

11) To study resistance by employees towards technological change.

12) To study the psychological impact of redundancy on workers.

13) To study the difference between the mean scores of manufacturing sector and service sector on the nature of change and period when redundancy program was carried out.
14) To study the difference between the mean scores of manufacturing sector and service sector on whether insourcing has taken place leading to job increase.

15) To study the difference between the mean scores of manufacturing sector and service sector on work redundancy due to technological change.

16) To study the difference between the mean scores of manufacturing sector and service sector on worker redundancy due to technological change.

17) To study the difference between the mean scores of manufacturing sector and service sector on work redundancy among different units of the organizations.

18) To study the difference between the mean scores of manufacturing sector and service sector on worker redundancy among different units of the organizations.

19) To study the difference between the mean scores of manufacturing sector and service sector on the rate of work redundancy for different types of jobs.
20) To study the difference between the mean scores of manufacturing sector and service sector on the rate of worker redundancy for different workers having various skill levels.

21) To study the difference between the mean scores of manufacturing sector and service sector on the adjustment mechanisms employed by organizations to deal with redundancy.

22) To study the difference between the mean scores of manufacturing sector and service sector on the implications of technological change on future employment.

23) To study the difference between the mean scores of manufacturing sector and service sector on resistance by employees towards technological change.

24) To study the difference between the mean scores of manufacturing sector and service sector on the psychological impact of redundancy on workers.

The present study is exploratory in nature. The population for the present study comprises of all organizations in India which are technology intensive.
The sample comprises of thirty-six organizations in technology intensive industries. The data were collected from the Human Resource managers of each organization. These thirty-six organizations were from different industries, namely, Banking (4 organizations), Information Technology (3 organizations), Automobiles (2 organizations), Power (5 organizations), Chemical (4 organizations), Machine Tools (6 organizations), Tea (2 organizations), Cement (4 organizations), Steel (2 organizations), Logistics (2 organizations), Consultancy (1 organization), and Health care (1 organization).

Purposive or non-probability sampling technique was used to select the sample.

A scale for measuring work and worker redundancy and its management in technology intensive industries was developed by the investigator as there is no scale available to study work and worker redundancy.

Even though the investigator tried to collect and analyse data on industry wise basis, difficulty in data collection made it impossible to analyse data on industry wise basis. As is evident from the distribution of sample that in some cases there is only one organization in one industry. Hence data has been analyzed by taking all the organizations together. Further, the organizations have been grouped on the basis of sectors into manufacturing and service sectors for the purpose of analysis.
Since the data was factual in nature, only frequency of responses could be calculated for each item where all the organizations have been taken together. However, where organizations have been divided into manufacturing and service sectors, t-test was used to study the significance of difference between the mean scores of both sectors.

The findings of the present study have led to certain conclusions. They are summarized as under.

- Findings of the present study imply that technology intensive organizations carry out change on a continuous basis.

- The present study has highlighted that new technology is the most important reason for work redundancy in technology intensive organizations.

- Findings of the present study indicate that there is work redundancy in every organization but the rate of work redundancy varies depending on the size of the respective organizations.

  Work redundancy is maximum in the production department.

- Findings of the present study has highlighted that skill level of the worker is the most important criteria for declaring a worker as redundant.
The present study indicates that there is worker redundancy in every organization but here again the rate of worker redundancy varies depending on the number of employees in the respective organizations.

Worker redundancy is maximum in the production department.

Findings of the present study imply that clerical jobs are the most affected due to technological changes.

Results indicate that the rate of worker redundancy is high in the categories of semi-skilled and unskilled workers.

Findings of the present study highlight that to cope with the phenomenon of redundancy, organizations retrain their workers and also redeploy them.

Results indicate that there is anticipation that middle management jobs and skilled organizational workers would be most required in the future.

There is mixed feeling regarding whether the number of jobs required in the future would increase or decrease.

Results indicate that employees resist the change processes taking place in the organizations inspite of the fact that they are involved in the change processes.
• Findings also highlight that go-slow is a common form of resistance; and management most commonly use communication and education, and involvement and participation to deal with the resistance.

• Attitudinal change in employees has been found in a number of organizations since introduction of redundancy program with workers showing signs of stress.

• Findings of the present study highlight that technological change affects all sectors of the economy, be it manufacturing or services.

• Results indicate that there is no difference between manufacturing sector and service sector on aspects of work and worker redundancy and its management in technology intensive organizations.