VALUE & ETHICS IN PROFESSION

Value

The word 'value' is derived from a French word 'valor' which means the worth, merit, usefulness or importance of thing. Value concept is more relative than absolute.

Value is worth that which renders anything useful. Value is a behavioral concept related to an individual or a group. In the determination of human behavior the most important factor is a person's specific value awareness.

Values set normative standards on the basis of which people make their choice of alternatives courses of action.

Following aspects help in understanding values:

- Giving due value for money to customers in terms of quaintly, quality and service.
- Defining corporate mission and strategies.
- Concern for efficiency at work place.
- Reasonable profit margins pricing.
- Farm proper and just decision in management function.
- Value of product that fulfill one's need or want.
- Leads like honesty, integrity, patriotism, selfless service, environment conservation, and non-violence etc.
- Feeling for society, nation and the poor.
- Market value of a commodity in exchange of value.
- Laws ha e their values because they are socially accepted yardstick of behavior.

Values sometime are also broadly classified as moral values and competence values. Moral values are concerned with modes of behavior. Competence values are concern with self actualization and such values reflect a personal rather than an impersonal focus, they are not so much concerned with morality.

Ethics

(a) Ethics arte basically codes governing "Dos" and "Don't". Ethics involves the study of moral issues and choices. It is conceded with right versus w3rong, good versus bad.

Some philosophers do not differentiate between business ethics and management ethics. According to them there is no such thing as this ethics or that ethics, there is only ethics.

What you do there is no different from what you do here. Morel implication springs from virtually every decision, both on and off there Job. Managers are challenged to have moral imagination and the courage to do the right thing. To meet that challenge, present and future managers need a conceptual frame work for making ethical decisions.

(b) Ethical and unethical conducts are the products of a complex combination of influences of the following parameters.

1. **Cultural Influences**
   - Family
   - Education
   - Religion
   - Media/Entertainment
2. **Organizational Influences**
   - Ethical codes
   - Organization culture
   - Role models
   - Perceived Pressure
   - Reward/Punishment system
3. **Political / Legal / Economic Influences**

Above there aspects lead to individual role – exceptions in the following:
Individual ethical behavior

- Personality
- Values

Moral Principles

Ethical or unethical behavio0ur is the result of person – situation interaction which is influenced by an individual's moral principles and the organization's ethical climate.

(c) Individual Differences, Values and Ethics: Due to a vast array of individual differences such as behavior, attitude, dress etc modern organizations have a rich and interesting human texture.

On the other hand, individual differences make the manager's job endlessly challenging.

Growing work force diversity comp\s managers to view individual differences in a fresh way.

Successful business and organizations are adapting to both internal or external changes such as operational styles, language, customs, values and dress etc.

We now hear leaders talking about "valuing differences" and leering to manage diversity.

So, rather than limiting diversity as in the past, to day managers need to better understand and accommodate employee diversity, and individual differences.

Utilitarianism is a value based modern policy making and the decisive test for most proposed legislation is "Will it serve the largest possible people with the greatest benefit".

The value based principle 'Utilitarianism' is best known by the maxim do whatever produces the greatest good for the greatest number of people.

Utilitarianism focuses on result of an action rather than ethics behind an action.

Ethics is a concept of what you ought to do and you have not to do because rules compel it (i.e. buying a ticket for train journey) or nature requires you to do it (i.e. sleeping and eating).

(d) Professional ethics: Professional ethics are guided by Si8x principles honesty, fairness, respect, compassion, integrity and self discipline.

Professional ethics are expressed in one's action. A professional manager while taking a decision must ensure that the above principles are not vi9olated. A guiding rule for valuation of the ethical content is that the action should always stand scrutiny.

Professional ethics may be integrated with the corporate and organization values.

In profession, ethical decisions are required to be taken for the overall benefit of the organization. self discipline in profession is the key to success. This is the single factor that can lift one man above his or her colleagues in terns of achievement and success.

P.E Ducker distinguished between and manager as a group leader within and organization and as an individual. Ethics of community responsibility should not be forced upon managers and hamper their leadership role. They should be professional and practice ethics related to their own profession.

Neither there is a separate ethics of business nor is one needed. Only mete out stiff punishments to those who yield to temptation.

A professional manager has to stand demands of professional ethics demands of ethics of responsibility.

A professional manager must scrutinize his deeds and behavior and be afraid of unpopularity.

A gross violation of professional ethics takes place when a manager knowingly does not stop stupid things that hurt the organization more than temporary unpleasantness of his actions.

(e) Managerial Ethics: Ethics is the code of moral principles and values that go en the behavior of a person or group with respect to what is right or wrong, ethics sets standards as to what is good or bad in conduct and decision making. Ethics deals with internal values that are of corporate culture and shapes decision concerning social responsibility with respect to the external environment. An ethical issue is present in a situation when the actions of a person or organizations may harm or benefit others.

The principles of ethics and social responsibili8ty are more widely recognized and companies can use codes of ethics and their corporate culture to govern behavior, thereby eliminating the need for additional laws.

Because ethical standards are not codified, dilemmas about proper behavior often occur.

An ethical dilemma arises in a situation when each alternative choice or behavior is undesirable because of potentially harmful ethical consequences. Right or wrong can not be clearly identified.

The dilemmas and issues, with which managers must deal, lie in the domain of ethics.

Most ethical dilemmas involve a conflict between the needs of the part and the whole, the individual versus the organization or the organization versus society as a whole.

Science, Technology & Engineering --- As Knowledge

Science, Technology and Engineering knowledge in the last two centuries and more so remarkably in the 20th century has made making as the commander of its own fate.

Through the ages of Newton, Archimedes, Galileo, Alfred Nobel, Einstein, C V Raman, S. N. Bose, Jadish Ch. Bose and H.G, Humana etc. the human being has gained knowledge, developed and improved scientific theories and has applied these theories in technology and engineering for the benefit of mankind and society at large.

Through the knowledge of Science, Technology and Engineering, the world has produced renounced Scientists, Technologists and Engineers who have not only excelled in their profession but also have contributed maximum for the benefit of human beings, the society and the worked at large.

Through the variant degree of application of Science, Technology and Engineering the human being has created the developed, developing and the third world countries by harnessing the nature and by productive and economic exploitation of natural resources.

Rich nations like USA, UK, France, Germany and Japan have used the knowledge of Science, Technology and Engineering for the maximum exploitation of natural resources in the most productive and economic away to give their citizens the highest standard of living.

The developing countries like India, Pakistan and Sri Lanka and Bangladesh etc. have been able to utilize the knowledge of Science, Technology and Engineering much to a lesser extent than the above rich nations.

There are some countries in Africa who have used the knowledge of Science, Technology and Engineering the least degree measure for exploiting the natural resources and therefore their citizens have remained poor with the poorest standard of living.

Science, Technology & Engineering --- As Social Activities

Through the application of knowledge in Science, Technology and Engineering, the human being has established supremacy over the nature and wild animals.

It has learnt to build shelter and modern apartments and buildings. It built towns and cities to line together as a social being.

Application of Science, Technology and Engineering has made mankind a civilized sociable class. The mankind has learnt to practice religion for the realization of God, has tried to embrace culture and customs and used suitable clothes and dresses to live together in the society.

Through the application of Science, technology and Engineering, the mankind has tried to control the river flow by building dams and bridges, used the river water for irrigation and built plants to produce fertilizers and pesticides for use in the land for the production of food grains, pulses and vegetables.

Application of knowledge of Science, Technology and Engineering has made mankind wise to control diseases and enhance the life expectancy.

It has helped in the eradication of small pox from the world and learnt to fight against many dreaded diseases in the course of time. It has learnt how to live healthy and create a healthy society.

Through the application of Science, Technology and Engineering, a human being has developed the transport and communication systems of modern age, e.g. supersonic jets, spacecrafts, Vsats, mobile – phones, and internets and websites. The uses of these items have made the world a very small place, easily approachable and communicable.

The advent of computers, software's and Information Technology has made the human society pound and their multifarious uses have proved ve5ry beneficial for human being and the society as a whole. To improve the quality of life in society, people need to concentrate on better management of public system like Communication, Transportation, Health, Education, Energy and Environment through the beneficial application of Science, Technology and Engineering.

If Science, Technology and Engineering knowledge's are used in concentrating on this vital issues a better quality of life ion society may combine with higher economic growth in the year to come, resulting in a stable and prosperous society.

Science, Technology & Engineering --- As Professional Activities

Today Science, Technology and Engineering have developed so much to absorb large number of people for their main occupation and profession. These professionals are Scientists, Technologists and Engineers, and management experts.

Professionalisation of an occupational group has two connotations, namely quality and relevance of knowledge and skills and enhancement of contribution to society. The former relates to education, training and expertise of individuals while the latter is reflected by the awareness of the public about the role and work of the profession and the image of its members among the people.

Knowledge and skill level of Scientists, Technologists and Engineers are indicated by the educational programmers they have gone through with the fast advancement in Science, Technology and Engineering fields, learning has to be a life long phenomenon.

Scientists, Technologists and Engineers require updating of knowledge by receiving inputs continuously in their career in order to maintain the quality and relevance of their professional expertise. Professionalism also demands that expertise is applied to work with due diligence and integrity. Ethical standards therefore need to be laid down for every profession and followed. With the expansion of international trade in goods and services, recognition of Scientists, Technologists and Engineers at international level is emerging as vital issue. The WTO regime calls upon professional Scientists, Technologist and Engineers to qualify as per internationally laid down and recognized norms to facilitate their global mobility.

Therefore Science, Technology and Engineering professions are very much required with various issues and ethics connected with the professional development and recognition of these professions in the domestic and international situations.

Finally, the Science, Technology and Engineering professionals should not forget what the architect of modern Singapore, Mr. Lee, had to say on the main ingredient for change, when asked how he did it; he replied ***"I have done nothing but enforced discipline in Singapore."***

Rapid Technology growth & depletion of Resources

Rapid Technology growth

What is Technology? : Technology is the most difficult of the three inputs to production to define and envision. Technology is a form of knowledge, it includes the knowledge needed to produce agricultural products from baby food to wine, the knowledge to make industrial products from penicillin to satellites, the knowledge to produce services from rock concerts to heart transplants, even the knowledge of how to get oil and minerals out of the ground.

Technology is defined as anything that raises the amount of real GDP that can be produced with a given amount of labour and capital.

Technological progress is an improvement an increases in technology, but since technology is usually increasing, the firm technological change also usually means an improvement.

Thus, technological progress also includes things that increase the quality and diversity of goods and services.

Invention, Innovation and Diffusion: Technological change occurs when new ideas are developed into new products that increase production.

Invention, which is discovery of new knowledge such as electricity is different from Innovation, which is the new knowledge brought into application with a new product, such as electric bulb.

Diffusion of the innovation throughout an economy is a process that involves advertising, marketing and spreading the innovation to new uses, such as use of electric bulb to create night shifts in factories.

Thus technology is much more than scientific knowledge. The discovery of DNA did not improve technology until it was applied to genetic engineering. The knowledge of mathematics mad e possible the invention and development of computers in the 1940s in the US, a technology that has obviously improved productivity.

Technology depends in part on scientific knowledge, and many people feel that science will become more and more important in future technological change.

The development of the sewing machine by the Singer Company in the US and its wide spread uses proves the concept how innovation and diffusion encourage Entrepreneurs who recognize the potential and invention.

Special Features of the Technology Market: When viewed as a c commodity that can be produced, technology has two special qualities that affect hour much will be produced. The first is non rivalry. This means that one person's use of the technology does not reduce the amount that another person can use.

If one University uses the same book, filing system as another University, that does not deduce the quality of the first university's system. In contrast most goods are rivals in consumption. The second feature of technology is non excludability. This means that the inventor can not exclude other people from using it.

Depletion of Resources

Natural resources are given to mankind by nature. Such resources are essential not only for development of economic activities like agriculture, industry etc. but also vital for existence of life on earth.

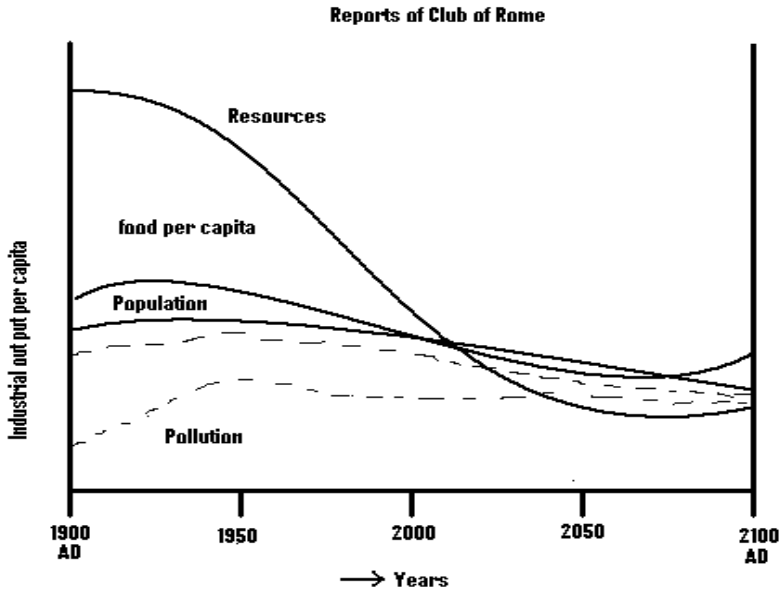
Natural resources can be broadly classified into: (1) renewable or replaceable resource which are the ones that be renamed over time or are automatically renewed. **(2)** non renewable or non replaceable resources which are there in limited quantities and the rate of exploitation determines the numbers of years for which such resources can be consumed. Minerals are largely in this category.

This distinction has become important in recent years as people have relished that they can not continue to extract many of the resources for long at their present rate of growth in consumption due to heavy pressure of population, and hence there is urgent need for control of over consumption.

People also realized that nature takes its own time to replete the renewable resources and there are some such resources like forests and water that are vital from the point of view of maintaining ecological balance and hence consumption of renewable resources too needs careful supervision.

India is rich in natural resources. Possession of natural resources by it self does not ensure development. It has to be supported by availability of technology for extraction and processing and capability to support development of processing and variety of other down stream industries. Countries are dependent on natural resources for furtherance of economic growth and it will continue to be so.

Reports of Club of Rome



The 'Standard' world model: Computer based graph produced by the club of Rome. All variables plotted here follow historical values from 1900 to 2000. food, industrial out put and population growth exponentially until the rapidly diminishing resources forces a slow down in industrial growth. Some time after the peak of industrialization both population and pollution (due natural delay in the system) continue to increase.

Population growth is finally halted by a rise in the death rate due to declined food and medical services. Depletion of non renewable resources, reports of club of Rome, Limits of Growth & sustainable development.

Various thinkers maintain that if we are to preserve enough scarce resources for future generations to maintain their quality of life at satisfactory level, we shall have to scale down our pursuit of economic growth.

The argument against this hypothesis is that future generations will be able to innovate and find advancement in science and able to maintain higher industrial growth with lower level of pollution.

Future generations will be able to maintain better health care measures, invent and use sophistical medicines and will fight dreaded diseases like small POX, AIDS, TB and CANCER etc. thus, they will bring down the death rates and also at the same time through spread of education and higher literacy rates will adopt family planning measure to keep control of birth rates. Thus, population will grow at a controlled rate.

Non renewable or depleting resources are natural resources such as fossil fuel and forest and minerals etc. with advancement of technology and science, people are able to find out new location of coal, petroleum, gas and minerals. Therefore, even though rise in population, more new lo actions are also being sourced out. Also with the help of science and technology, people are able to find substitutes of these resources by harnessing solar energy, wind energy and tidal waves to produce electricity for use at home and for industrial production and for irrigation in agriculture. Hydro electricity and nuclear energy are also non renewable energy sources to some extent.

As per E.F. Schumacher's claim, the industrialized nations would have to convert from growth oriented capital intensive technologies to much more labour intensive technologies in which more people would replace machines.

In the present context Schumacher's claim does not hold good. Because, all developed and developing countries in the world are at present adopting R & D more and more to invent new processes and technologies for maintaining higher growth rates in industrial productions and agricultural output with use of less man power.

Limits to Growth

A country like India has to advance in a number of directions at the same time. At each stage of development the essence of economic and social policy is to establish a combination of goals, supported by specific measures.

For a developing country like India with her larg3 population and manpower resou4rces, extreme dependence on agriculture, low levels of productivity and wide spread regional disparities, the overall economic growth is limited.

Economic growth is defined as an increase in per capita income of a sizeable order that should be the prime object of economic development in a low income country like India where living standards of the vast millions are palpably low.

The process of economic growth is influenced by a large number of economic, social are political factors. Prefessor Nurkse points "Economic development has much to do with human endowments, Social attitudes, political conditions and historical accidents."

A multitude of factors affect growth process in a country,
Factors affecting growth may be grouped as:

(a) Economic factors, (b) Non economics factors.

(a) Economic factors: Following are the major economic factors determining the process of growth in an economy.

1. Natural Resources
2. Human Resources and Population Growth
3. Capital formation and Capital accumulation
4. Technological Progress
5. Entrepreneurship
6. Investment Criteria
7. Perfecting the Market
8. Capital output ration

(b) Non economic factors: Non economic factors are desire for development, wide spread Education, Social and Industrial Reforms, Law and Order and Good Government.

Natural resources include land, social climate, forests, rivers, minerals etc.

Growth depends on the proper and full exploitation of these resources.

Limits of growth derive from the limited natural resources and the limited degree of exploitation of the natural resources.

For the over populated countries where population growth is rapidly increasing, the rate of economic growth is very much curbed.

Unless the infrastructures of the economy improved, social taboos and other socio economic imperfections and imbalance are removed, the very good policies of a government may not be able to produce results and all these conditions would limit the economic growth processes.

Sustainable Development

This refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The right to development must be fulfilled so as to meet developmental and environmental needs of present and future generations.

The Govt. and the public must work together for eradicating poverty as an indispensable requirement for sustainable development. International actions in the field of environments of interest are needs of all countries.

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and can not be considered in isolations from it.

To achieve sustainable development and higher quality of life for all people, the engineering professionals should reduce and eliminate unsustainable patterns of production and consumption.

Also the Governments should promote appropriate demographic policies.

In order to protect environment, the precautionary approach shall be widely applies by the governments of countries according to their capabilities. Where there are threats of serious or irreversible damage it is not proper to postpone even the cost effective measures to prevent environmental degradation.

Environmental impact assessment, shall be undertaken for proposed projects that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

The creativity, ideals and courage of the youth should be mobilized for building a good society in order to achieve sustainable development and ensure a better future for all.

Energy Crisis & Renewable Energy Sources

Energy is the main locus of pollution problem. Development involves exploitation of non renewable natural resource like coal, petroleum and gas and renewable natural resources like air, water plants and animals' life and this lead to discharge of waste products which pollute the environment consisting of land air and water. When the wastes are discharged at a rate exceeding the carrying capacity of environment, the degradation in environmental quality take place.

The available energy sources in India in term of increasing sots are coal, Natural gas, Bio gas, oil, wind, solar, hydro and nuclear.

Bituminous coal is C_{13} $H_{10}O$ and Indian Coal contain about 35-48% Ash and 3% Sulphur. CO_2 and SO_2 Production per unit of energy generated, coal is the worst offender and Natural Gas the least. Use of coal currently contributes to over 70 percent of total electricity generation in India and the energy sector accounts for about 80% CO_2 green house gas emission that is mostly CO_2.

CO_2 is the most important gas which cases global warming by trapping solar heat and more and more concentration of this in atmosphere is expected to create catastrophic environmental disorder.

It has been estimated that in order to meet the energy demand of ever growing population in India, the quantity of coal needed for producing energy will be more than double by 2012 AD from the present level.

Many coal deposits in India are located in areas rich in bio-diversity and these areas need be specially protected as they are crucial for India's survival. Mining operation need to be harmonized with protection of genetic stock and forest areas.

Renewable Energy Sources

Much of the solution for the present energy crisis and environmental pollution depend on speedy exploitation of non conventional renewable energy sources.

Solar energy is in exhaustible and O & M costs for solar power plants are the least. India has over 6000 kms. Coast line and almost 300 days in a year bright sunshine to facilitate utilization of solar energy.

Tata BP Solar, Siemens Ltd and other companies are existing players in this field.

Even though silicon is the most commonly used for Solar PV Cells, development of Solar Cells using Titanium di oxide has already made a good progress.

The West Bengal Renewable Energy Development Agency has been successful in providing minimum electricity needs of many rural households in the Sunder bans area using Solar energy system.

(a) Wind Energy

Since the 1980s India has been utilizing wind energy. Wind energy utilization in Orissa, Gujarat, Tamil nadu, and Maharashtra has been satisfactory, NEPe – Mecon Ltd makes wind generators.

In Meendweep island in the middle of river Hooghly and one km. away from Haldia town, the West Bengal Renewable Energy Development Agency (WB REDA) has planned to set up a wind diesel power plant which will be the largest of its kind in Asia.

1.5 Mw power plant was commissioned in 2005 using Canadian technology. Wind diesel integrated controller system can be used very effectively in areas where wind does not below at a high speed round the clock throughout the year.

From April to September, when wind velocity remains at an average of 20 kmph, the wind power station would be able to meet the required production.

Wind energy is environment friendly and is a decentralized energy source. It has modular concept for addition of capacity and has low O & M costs. 50-100 MW wind energy plants can be commissioned in about 2 years compared to high gestation period of 5-6 years for Coal Thermal and 8-10 years for a hydro electric project and 10-15 years for a nuclear power plant.

More and more large and medium scale industrial units in India should be encouraged by Governments in the form of subsidies and benefits for developing their own power plants through utilization of solar and wind energy sources.

(b) Bio Gas Environment Friendly

Bio gas is 60% methane and 40% carbon di oxide. Bio gas production can meet the energy crisis to a great extent. Bio gas is produced from anaerobic. Fermentation of cow dung, nightly soil, p[poultry dropping, pig manners etc. approximately one metric ton of these wastes can produce 2000 standard cubic meter of Bio gas equivalent to 100 liters of kerosene,

Bio mass is renewable and Bio gas is comparatively environment friendly energy source.
Both the central and state Governments in India should encourage bio gas production especially in the rural areas.

Bio gas plant should be constructed in the village level, block level and district level starting with plant size for 10 family size, 100 family size and one lakh family size or even large depending on viability.

This will facilitate substitution of kerosene and fire wood to a large extent to help the country preserve precious foreign exchange and valuable forest reserve.

(c) Energy Conservation

Energy conservation directly results in pollution abatement. Inefficient use of energy must be stopped or curtailed and energy conservation measures should be adopted in all production activities and other spheres where usage of electrical energy or fossil fuels are involved.

It is estimated that India can save as much as 5000 MW through energy conservation measures adopted in the industrial sector alone.

Environment is concerned with the relationships of living things and their environment. It provides a framework by which can be seen that tall living things are related to other living things, and they are like wise related to their physical environment.

The eminent humanist biologist, Paul Ehrlich, in book, "The Population Bomb" Listed following seven rights of mankind:

The Right to eat well,

The right to drink pure water,

The right to decent shelter,

The right to enjoy the natural beauty,

The right to avoid pesticide poisoning,

The right to freedom from thermo nuclear war,

The right to limit families,

The right propounded by the eminent thinker have proved to be more fantasizes as day-to-day, the rights themselves are being alienated from the technology savvy human. Thanks to the ever increasing environmental pollution which is disrupting the ecology.

Pollution of air, water and soil is caused by several agents. The main among them are:

i. Natural Pollution

ii. Population Explosion

iii. High Standard of Living of People

iv. Deforestation

v. Vehicular Traffic

vi. Dams and Canals

vii. Agriculture

viii. ***Population Explosions & Industrial Growth***.

i. ***Natural Pollution :-*** This is caused by thunder storms, forest fire, lightening and volcanic eruptions etc.

ii. ***Population Explosion: -*** Population explosion, known as the population bomb, is probably the biggest source of pollution. It is estimated that world population is doubling every thirty five years and in the year 2000, the world population has exceeded six billion.

What makes population explosion serious is that every additional person adds pollutants to land, air and water.

iii. **Standard of Living: -** Industrialization has raised the standard of living enormously,. Increased standard of living acts as a source of pollution. As people consume more, their consumption tends to create more wastes.

The more elegant their tastes for food become the more garbage and other refuge they produce. The more they by, the more paper and packaging are required, most of which become refuge.

Poor and rich alike cause damage to the environment for different reasons. One for sheer survival and another for leading grand life styles.

Rich constitutes about 25 per cent of the world's population, but consume disproportionately higher share of resources to maintain their grand life styles.

For example, this 25 per cent uses 80% of Commercial energy. The average annual per capita milk consumption of the rich is 320 kgs, as against 39 kgs, for the poor.

Similarly, 85% of metals, minerals and Chemicals, 70 per cent of fossil fuels, 90 per cent of automobiles are used by the rich.

Higher the consumption, greater the scope for causing pollution.

iv. **Deforestation: -** Forests are an essential part of the environment. They check soil erosion, counter floods and land slides, shelter vast variety of flora and cause rainfalls.

Mankind has systematically ravaged forests for his agricultural operations, cooking purposes and other uses. It is estimated that we are losing 1.3 million hectares of forests every year due to deforestation.

Besides destruction by human being, danger of forests comes from acid rain which is common in the industrialized countries. In the Federal Republic of Germany, 34 per cent of the nation's forests were dead by 1981 due to act rains.

v. **Vehicular Traffic :-** Movement of vehicles cause both air and noise pollution, Pollution of the air is the severest and there are agencies to monitor the magnitude of the problem

Due to enhancement in the standard of living, more and more people in the metro cities and towns are using two and four wheeler automobiles causing the severest pollution through the emission of Hydrocarbons, Carbon monoxides and Nitrogen oxides.

vi. **Dams and Canals** :- Irrigations schemes creates no more new land than they destroy. Resettling people cause huge economic and cultural disruption.

It is not environmental degradation alone that is the major ill effect of a dam. There are other side effects such as breaking up of cultures, loss of fish, uprooting forests etc.

Construction of dams and canals create unforeseen negative effects on the ecosystem.

Opposition not with standing, construction of dams and canals continues posing substantial damage to the environment.

vii. **Agriculture:-** Dust form fallow fields, increased turbidity of run off water, nitrate pollution of surface and ground water, pesticide pollution and wet logging are some of the forms of pollution arising out of agriculture.

Greatest damage to the environment comes from the use of fertilizers.

While increased use of fertilizers has helped improve crop yields, their use has resulted in

(a) Improving the natural nitrogen fixation process.

(b) Introduction toxic nitrates in water supplier.

(c) Contributing to air/land pollution besides having adverse effects on fish, wild life and humans.

viii. **Population Explosion & Industrial Growth: -** India's population is currently growing at the rate of 1.7 per cent and it has crossed 1 billion mark in the year 2000.

As per World Bank estimate, India's population is likely to be 1.35 bullion by 2025. it may be even more, if the target relation to population control measures are not met.

All these are indicative of the growing population density, and thus the emerging scarcity of natural resources.

The exponential growth of population has put India in an uncomfortable position with regard to natural resources.

Particularly fuel mineral resources are presently deficient.

In sectors such as bauxite, limestone etc., there are vas reserves but production is not very organized and production techniques are by and late out dated. Modern production techniques have hardly made any in roads, primarily on account of preponderance of small mines.

So far as fuel minerals are concerned, the situation is seriously critical and calls for urgent attention.

The new industrial policy of Govt. of India, have ushered a new phase of industrialization where the industrial sector has witnessed not only large flow of investments but also considerable diversification.

Growth of non traditional industries like electrical machinery electronics, Tele communications, petrochemicals has been substantially significant, and this is expected to substantially raise the demand for such resources in which the country has shortage.

Eco-friendly Technologies

Eco-Friendly Technologies & Products: Process technology is intimately linked up with pollution control technology. During the last 5 decades, in many advanced countries, several process technologies have undergone changes and replacement. Products produced by dirtier technologies have been substituted by products produced by cleaner technologies.

Many innovations involving pollution free process technologies have resulted from research investigations on pollution control erasures.

Example: Eco-friendly Technologies:

(1) Recycle of waste paper and old News print followed by de inking process this technology has been accepted world wide as an eco friendly technology which does not encourage de forestation for manufacturing paper and also the process uses eco friendly technology which generate minimum effluent which is easily treated before discharge into surface water.

(2) Production of Chemical Fertilizers form Natural Gas instead of using coal or Naphtha Technology of using coal or Naphtha Produce lot of harmful greenhouse gases like carbon dioxide and Nitrogen oxides etc; whereas Natural gas technology is an eco friendly technology because Natural gas burs completely producing more water vapor and less carbon dioxide.

(3) Countries conscious of clean environment are encouraging more and more eco friendly processes which encourage hydro electric power projects, non conventional and renewable energy source such as wind generators, solar power stations and are discouraging thermal power stations which are worst polluters of environment.

(4) Technology for Production of chemicals to replace CFC compounds presently used in refrigeration and other uses, which are primarily responsible for ozone layer degradations.

MNCs like ICI, Du Pont others have developed this type of eco-friendly technology which should be used by all countries in the globe in an attempt to perfect the ozone layer.

(5) Eco-Friendly Processes and Products: As a part of social responsibility of business, a company is required to maintain clean and healthy environment voluntarily. Hence, it must take steps to prevent all types of pollution.

The government has also offered fiscal benefits and concessions to encourage industrial units to undertake all pollution control measures.

Environmental quality, human health and public welfare need not be sacrificed for the fast industrial growth.

Concern for better environment has shown maturity in all developed countries. It is also growing in developing countries including India. Earlier emphasis was merely on pollution control and punishing polluters.

Since 1986 the emphasis had been on sustainable economic development that meets the need of present as well as future generations, i.e., development without environment degradation.

Economic development and sound environmental management complement each other and are two sides of the same coin.

Concerned environment campaigning has created a strong public opinion for environmental concerns, and as consumer awareness increases, consumer preference will be expressed by public compelling corporate sector to cater to changing demands created by public.

The companies will realize the seriousness of environmental concerns and issues. They will learn to opt for processes and products which are environment friendly.

Preference for green consumerism and environment friendly goods will encourage the companies to add a green tint to their products and packaging exhibiting real environmental considerations.

The central Pollution Control Board in India is the authority to implement Eco mark schema on voluntary basis.

To begin with, the Eco mark can be applied to products using natural substitutes instead of synthetic materials or using wastes or re cycled matters to produce useable consumer goods.

For instance, a company may start Eco marking electrical appliances using much less energy Washing machine s using much less water, transport vehicles using less petrol or diesel thereby causing fuel conservation and minimum pollution and such other products using less natural resources i.e., less energy, less water, less packaging and so on.

The idea is to establish the concept of the Eco mark using products based on value for money (kms per liter, kw per hour of operation etc.) but which are also environment friendly and help in the conservation of natural resources.

In many western countries Eco mark labeling has achieved considerable progress. The German blue Angel Environment Labeling Scheme by 1994 has 4000 Eco mark products.

There are mimeos herbs and plants based drug which are now preferred by consumers. The recycled paper and plastic goods, fly ash bricks, bio gas energy are various examples of environment friendly goods and their use can be encourage d by Eco mark labels.

West recycling is a global concern to protect our environment from solid/liquid wastes causing pollution. The planed waste management and its use are duly encouraged by the government.

Eco-friendly technologies and the solid/liquid waste management are discussed in details elsewhere in this book.

(6) Abandonment of Products and Processes due to Social Resistance.

Environmental protection must be integrated into business planning, business strategies and processes used in industries, ecology and development are not in consistent. They can go together. Economic growth promotes clean environment. Developed countries have better environmental awareness and environmental protection.

The major task for India is to ensure that in all our economic and social processes, we take full account of the environmental costs. Now we are in a situation where land, air and water degradation already constitutes a serious problem in our country. Growing air and water pollution is seriously affecting the quality of most of our lives.

As development proceeds, the use of energy and natural resources will also increase. The challenge ahead is to adopt a pattern and style of development that will not put unsustainable pressure on our resources, particularly non renewable ones. The best is the polluter pays.
India has a special legislation to provide environmental protection. Under this national Environmental Protection Act, Environment Impact Assessment and Environmental Impact Statement reports must be made mandatory before launching any new project. E.I.A must include the cost of impact on the environment produced by a manufacturing project into the sale price of product.

The combined effects of consumer Protection Act and Environmental Protection Act will ensure societal consumerism in a broad sense.

Concern for better environment has shown maturity in all developed countries. It is also growing and developing countries including India.

It is the spirit of partnership between the industry, the community and the government. That has brought about successes in assuring sustained economic development and in reducing environmental pollution.

Disposable packages have crated problems of pollution in towns and cities. Paper napkins, disposable diapers, drinking cups, bottles, beverage cans etc. have added pollution.

Due to spread of education and enhancement of literary rate and popularity of TV and Radio, public at large are now conscious about environmental degradation, side effects of new drugs, harmful effect of smoking and drinking.

People want to avoid products which have been produced by polluting the environment. They want to avoid the appliances which consume excessive electrical energy and water.

Health consciousness among educated people has prompted them to go in for cereals, pulses vegetables and fruits produced by using bio fertilizers rather than chemical fertilizers.

Eco labels are being attached to fruits and vegetables which are produced without use of chemical fertilizers and pesticides.

Peoples awareness and resistance have been responsible for closing many plants and processes which cause pollution and fire hazards in surrounding areas.

In the nineties, many small and medium scale polluting industries in Delhi were plants and processes which caused pollution and fire hazards in surrounding areas.

In the nineties, many small and medium scale polluting industries in Delhi were forced to shift to distinct places by High court orders.

Similarly, more than 200 tannery producing units in the eastern zone of Kolkata city have been relocated ate safe distant place Bantala as per order of the High Court.

Tolerance Limits – Standards:

(i) Tolerance limits prescribed by Pollution Control Boards for Industrial Effluents for discharge into inland surface water.
IS 2490 (Part - I) – 1981: This standard lays down general tolerance limits for all industrial effluents discharged into inland, surface waters, marine coastal Ares, public sewers and on land for irrigation purposes.

(ii) Tolerance limits for sewage effluents discharged into inland surface water.
IS 4764, 1973

(iii) Tolerance limits for sewage effluents discharged into inland surface water.
IS 5182 (Part IV), 1973: The particulate matter concentration in ambient air shall not exceed the following limits when analyzed as prescribed in IS-5182 (Part IV). 1972-Limit-200 mg/m^3 for SPM & 60 mg/m^3 for sulphur di - oxide emission.

Environmental Regulation

Important Provisions of the Environmental Regulations Acts:

1. The water (Prevention and Control of Pollution) Act, 1974 along with amendment act 1978.
2. The Air (Prevention and Control of Pollution) Act 1981.
3. The water (Prevention and Control of Pollution) Act 1977.
4. The water (Prevention and Control of Pollution) Rules of 1978.
    (a) Minimal National Standards for emission of pollution gases and industrial effluents.
    (b) Other laws enacted to protect environment are:
5. The Air (Prevention and control of Pollution) Act, 1981 amended in 1988.
6. The environment (Protection) Act, 1986.
7. The water (Prevention & Control of Pollution) Act, 1974. amended in 1974 and 1988.
8. The Hazardous Wastes Act, 1989.
9. The Wildlife Protection Act, 1972.
10. The Forests (Conservation) Act, 1980 amended in 1988.

a. Regulatory agencies such as National A forestation and Eco development Board and National Waste land Development Boards also have been set for the environmental protection.

b. Various industrial pollution control Projects such as Clean Ganga Acton Plan, Pushkar Lake Valley, Aurovile (T.N), Tumkur (Karnataka), Gopeswar in UU & Shivalik in Punjab have also been carried out for protection of Environment.

Environmental Ethics

a. Important Parameters

(i) **Environmental Threats :-** Greenhouse Gases, Depletion of Ozone Layer, Acidification of Water / Soil Urban pollution & Noise, Metals effects. Organic pollutants effects, Land and water in appropriate use, Land, Water exploitation Housing/ Industrial Infrastructure, Pressure on conservation.

Non Cyclic Material flows & Hazardous residues.

(ii) **Greenhouse Effect: -** Ideal global temperature is average 150C, or else the world will freeze, the emissions of CO_2 cause alarming tem premature increase and polar ice caps to melt and increased ocean water levels which may submerge many parts of low lying areas, causing hardship[s for human residents.

(iii) **Greenhouse Gases: -** CO_2 Nitrogen Oxides, CFCs, HFCs, Halogens convert hydrocarbons to CI_2, FI_2, Br_2 and I_2 and replace H_2.

(iv) **Ozone: -** It is in atmosphere and protects life against harmful UV radiation, but at ground level, it is it is harmful to lie and forms breathing disorders. Its depletion is causing holes at Poles, from where the UV radiation is leaching in.

(v) **Whistle Blowing: -** Whistle blowing is an attempt by an employee to disclose, what is proclaimed to be wrong doing by an organization, reporting misdemeanor to some one.

(vi) **Strategy :-**

(a) **<u>Reactive Strategy</u>: -** Resistance of public or government pressures by legal means.

(b) **<u>Defensive Strategy</u>:** - A firm defends its position by less aggressive means. The firm does the minimum requirement and not more, unless compelle3d to do so.

(c) **<u>Strategy of Accommodation</u>: -** More progressive of the strategies, incl9ude acceptance of ideas for social changes, firm's resistance is to the extent of what is not in its best interests. Most companies adopt this strategy.

b. Environmental Ethics – Case Study

Proactive strategy followed by progressive firms where numbers low, but have social good in their active policy. foreign companies operating in Pune since 1960s, installed Eco friendly processes, had concern for water, air and surrounding environment and quality of life for its employees and neighbors.

TELCO planted more than ten million trees and filled up blasted craters with lakes of quality water, so also Kirloskar group companies followed this process.

Before 1960s Pune was green, while the industrial belt running from Kasar wadi to Nigdi, was all non agricultural land. The rocky surface has no top soil, except for a new inches of acidic mud. The govt. Of Maharashtra decided to open the area for rapid industrialization.

The factories first took up ecological development and side by side the mfg. infrastructure.

The result to day is that the residential Pune has become a concrete, unplanned chaos, while industrial area is lush green like Send Society and adjoining University campus, including Spicer college premises, are exceptions.

Here the residents have resisted all moves by Municipal authorities to open up for multi storied monsters and render the remaining lungs of, what was once a beautiful city, into a mega mess, here also.

Appropriate Technology Movement of Schumacher & Later Developments

The economist E.F. Schumacher has claimed that the most pressing social need at present is finding ways of decreasing consumption. Increasing consumption has led to a rapid industrial expansion that has polluted much of the natural environment and has rapidly depleted our non renewable resources. Unless we limit consumption, we will soon out run the crinite natural resource our planet possesses with disastrous consequences for us all.

However, Schumacher' claim ay hold good for the third world countries, poor nations which are deprived of new technologies for want of innovation, entrepreneurial skills, funds and proper education.

Thus, even though there is continuous depletion of non renewable resources and also the economic growth is limited, through the developing of science and technology human being would strive for maintaining sustainable development.

Advancement in technology would find ways to minimize the consumption of non renewable resource without sacrificing standard of living and also find out suitable substitutes of non renewable resources.

Schumacher was a profound western thinker of the modern times. About the decline in aesthetic, ethical, cultural and spiritual values, Schumacher has remarked ***"after many centuries of technological imperialism," we have now had three centuries of even aggressive scientific imperialism,*** Schumacher's remarks about the after of technological development are as follows:

"At present there can be little doubt that the whole of mankind is in moral danger not because we are short of scientific and technical know how but because we tend to use it destructively, without wisdom."

"Wisdom helps us discriminated between troupe knowledge and false knowledge. Wisdom also helps decide the significance of knowledge and right use of knowledge. Wisdom is the way knowledge is used to add value to life."

"Wise use of knowledge is that which toads to the well being of the individual and the society. Misuse of modern science and technology is the most poignant example of the danger when increase in knowledge is out accompanied by an increase in wisdom."

Upholding the values in the midst of technological movement, Schumacher has said that ***human beings' value judgments are guided absolutely by their desire or happiness and are therefore merely attempt to bolster up their illusion by arguments.***

Schumacher describes this as the attitude of scientific imperialism which places its faith in the Scientific knowledge.

But the really important question of human existence to day is now to lead a good life and how to be a good human being, and how to create a good society.

If we agree with Schumacher's contentions we could say that it is of utmost importance that the intellectual resource of humanity be directed more towards finding answers to these value norms rather than beige totally committed to more fact finding scientific pursuits or business pursuit of trade, commerce, technology and management.

The modern intellectual behavior does not accord due importance to the exploration of aesthetic, ethical, spiritual and religion experiences of life. In their place it emphasizes social science like psychology, anthropology and sociology etc.

One of the modern. Intellectual temper in the unquestioning adoration of Science and Technology which may be called scientific.

At the other s9ide there is attitude of unquestioned acceptance of patently internal and superstitious beliefs like those astrology, palmistry, psychic and supernatural powers of the so called god men. An example of superstition is as follows.

Even the highly educated Indian hearing the tick sound of a lizard immediately postpones his journey, lest the object of his journey is frustrated.

Technology and Developing Nations

Technology is defined as a systematic application of scientific or other organized knowledge to practical tasks.

During the last two centuries technology has developed substantially. Science and technology enabled mankind to conquer distances. Control birth rates, save lives, generate, preserve and distribute energy, discover new materials and substitutes to existing ones, introduce machines to do the work of human beings, substitutes mental work with computers, prove deep into scan and space in search of new treasures, provide himself with lot of leisure and comfort.

1983 was particularly considered by scientists as the year of scientific success. In the year scientists put a billion dollar technology into9 space, produced the world's first test tube triples as obtained evidence of other solar system.

In the field of medicine, Japan marketed the much awaited artificial blood system.

A major break through was achieved in the field of genetic engineering to cure dwarfism.

The US physicists stripped off all the electrons from the Uranium atom thus exposing the bare nucleus. It was also the year when doctors were confronted with a baffling disease, viz AIDS that has taken a heavy toll of human lives.

The year 1998 belonged to nuclear scientists of India, they shook the world with a series of underground nuclear blasts at Pokhran, resurrected a dead atomic reactor in Rajasthan, and concluded negotiation with Russia for building a 2000 MW atomic power station in Tamil Nadu.

Globally, the years witnessed an important event, construction of an international space station

Technology is the most dramatic force shaping the destiny of people all over the world. Some of the technological invention the man feels, are wonders. Some other are horrors, and yet other have mixed blessings.

Automobiles and television have evoked mixed reactions. Hydrogen bomb, nerve gas and sub – marine guns have proved to be horrors. Penicillin, open heart surgery and birth control pills are wonders.

Technology and Society:-

Perhaps the most striking influence of technology is found on society. Practically every area of social life and the life of every individual has been changed by the development in technology.

Business is an institution through which human being expects new discoveries to be converted into goods and services.

Business organization spool the necessary resources and work on the we discoveries to convert them into useful products.

Society depends on business to benefit from new discoveries flowing into useful goods and services for all mankind.

Developing countries have learnt that scientific discoveries means very little to them unless they have competent business units to produce for people what science and technology have discovered.

Developed countries have learnt that their progress stops unless they operate a business system which contributes to discovery and uses discovery to produce for their people.

That technology reaches people through business is only part of theory. The economic prosperity of a nation (of which business is a part) depends on technology. Major growth of USA, UK. Germany. France and Japan has come from technical progress.

Technology has contributed to the emergence of affluent nations. These countries invest heavily or R & D to produce technology which is used by them for heavy doses of industrialization, sophistication in plants and machineries, and superior quality goods and services.

On the contrary, developing countries like China, India and Bangladesh etc. where the one tired of the world's total population live are able to consume less than 40% of world's total income for their living and are unable to devote resources for Research & Development. These developing countries are always importing technology from the above advanced countries.

Also there is a process of brain drain i.e. migration of qualified and talented professional from the developing countries to the affluent nations due to easy availability of excellent career prospect and every type of living comforts.

Scant resources and non availability of talented professionals for the developing countries are causing problem for developing new technologies.

Even though, India is in a position to develop some technologies in the field of nuclear, IT, steel, chemicals etc. the country is still depending on the advanced countries for import of technologies.

Peter F. Drucker, the management guru, has emphasized that success depends on making obsolete one to own profitable technologies, and as quickie as possible. His logic is simple, however great one's technology is, once a rival develops a better one, knowledge will corner all super normal profits, leaving his holding an unprofitable, even al l unseal able product that is why in a competitive economy, entrepreneurs run like help to remain where they are.

Developing nations like India, do not let a technology depreciate. Till few years ago, the automobile industry in India was relying mostly on outdated technology.

Singapore Air lines changes air craft every three years, in India we operate the oldest Boeings.

The developed nations spend more funds on inventing technologies and according to phase there is 1st generation. 2nd generation 3rd generation and the fourth generation of technology.

For developed nations technology is embodied in ideas, where as in developing nations, it is embodied in machinery.

Hence, as technology depreciates the developing nation look for new machinery, not for better ideas.

Ideas need innovative researchers. The entrepreneurs in developing nations have little concern for technology depreciation, nor for taking up R & D Programmers.

The industrialist in developing nations normally does not change their products till machinery indigenous technology development.

The globalization of Indian economy has forced Indian industrialist to carry out R & D activities in some sectors such as Pharmaceuticals, Automobile, Railways, Textile, Defense equipment and space etc.

Problem of Technology Transfers

Technology transfer is the process of taking new technology from laboratory to the market place. This transfer takes larger time as organizations grow in size.

The US based chemical giant DuPont has long been known for its excellence in basic corporate research. In the early 1990s, for example, it led US chemical companies in patents applied for and granted. The company spent more than $ 10 billion on chemical and relates research during the 1980s but the management admitted that the company failed to develop much in the way of major innovation.

A company may also decide to make or buy R & D although in-house R & D has been traditionally an important source of technical knowledge for companies, firms can also tap the R & D from a technology supplier company through contractual agreements, such as licensing, R & D agreements and joint ventures.

When product life cycle is long enough, a company is likely to choose its own R & D.

As a rule, it may be stated that company should buy technologies that are commonly available technology may be appropriate in the following cases:-

1. *The technology is of little significance to competitive advantages.*
2. *The supplier has proprietary technology*
3. *The supplier's technology is better and/or cheaper and reasonably easy to integrate into current system.*
4. *The technology development process requires special expertise.*
5. *The technology development process requires new propel and new resources.*
6. *Decision of management on product innovation process or/and innovation*.

The 2nd factor in technology transfer is time. The time between innovation and commercialization is less for larger companies and is more for smaller companies.

During 1997-98, in India, Bajaj Auto spent Rs 24 crore in R & D which was less than one percent of its annual sales, so also Reliance Industries' Rs. 39 crore expenditure in R & D was less than 0.3% of its sales turn over. Tata Steels Rs 10 crore spending in R & D (1997-98) was less than 0.2% of its sales.

On all India average, R & D expenditure is less than one percent of its G.N.P. in contrast, UK spend more than 2% Japan 2% and US more than 2.3%,

Companies can no longer assume that competitors will allow them the time needed to recoup their investment. Time to market, therefore, is an important consideration because 60% of successful potential innovation are limited within four years at 65% of the cost of innovation.

In the 1990, Japanese auto manufacture gained incredible competitive advantage over UK manufactures by reducing new products time to market to only three years whereas, US auto companies needed five years.

The third thing is that as new technology comes in, the old technology needs to be abandoned the process of old replaced by new is called technological discontinuity. Such discontinuity occurs when a new technology can not be used simply to enhance the current technology but actually substitutes for that technology to yield better performance. The company's R & D team must determine when to abandon present technology and then to develop or adapt the new technology.

Another important item is that the firm must decide whether to adapt R & D programmed or outsource technology. The make or buy decision can be important to a company R & D although in house R & D has been traditionally an important source of technical knowledge for companies firms can also tap the R & D capabilities of competitors, suppliers and other organizations though contractual agreements such as licensing, R & D agreement and joint ventures.

In case of longer product life cycles, (such as Steel, Aluminum and Cement etc.) a company a more likely to choose its own R & D not only because it gave the firm a ginger lead time before competitor started imitating, but also because it was more profitable in the long run.

In case of shorter life cycle products such as FMCGs or consumer durables, a company may choose to buy technologies that are commonly available but make those that are rare, valuable, hard to imitate, and have no close substitutes.

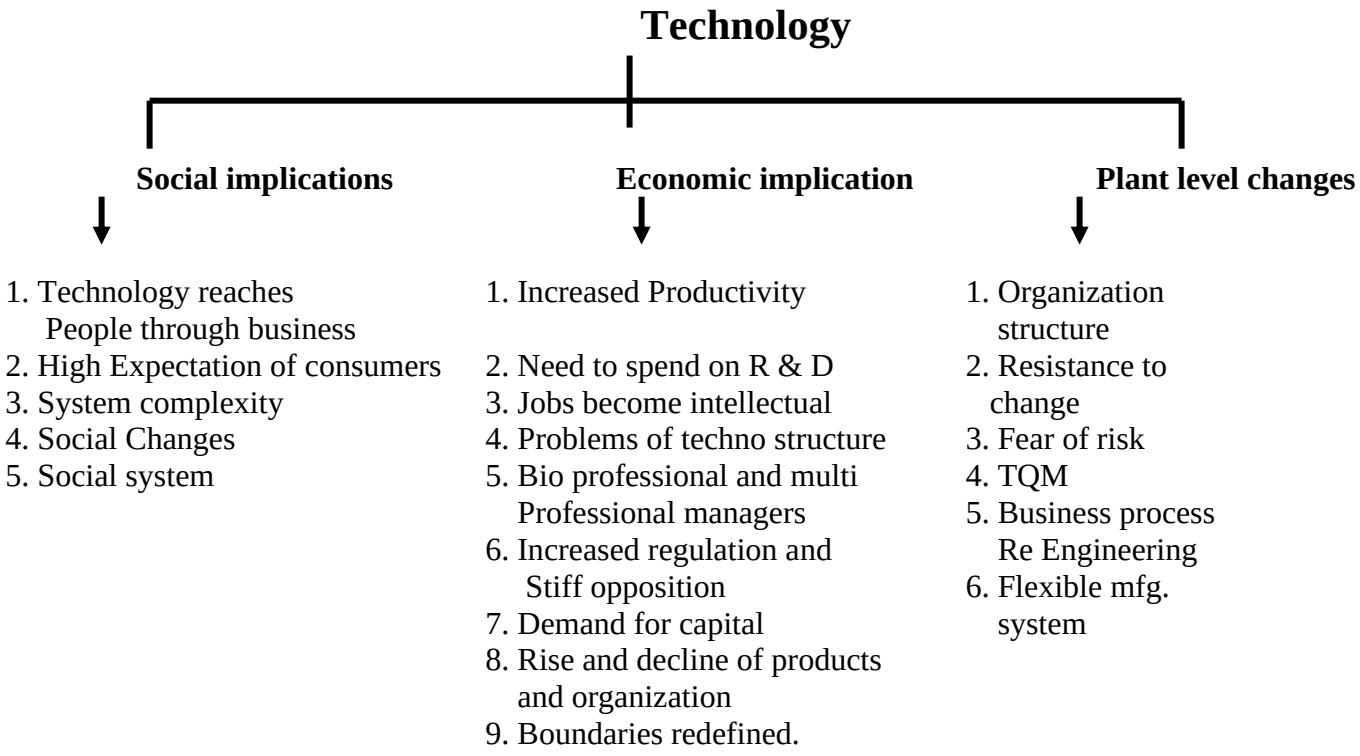
Lastly, the issue relates to the decision on product innovation or process innovation. In the early stages, product innovation is most important because the product's physical attributes and capabilities affect financial performance considerably.

Later, process innovations such as improved manufacturing facilities, increasing product quality and faster distribution become important in maintaining the products economic returns. German and Japanese companies have been most successful in process innovations.

Technology Assessment Impact Analysis

The impact of technology is discussed below under three heads:-

(a) Technological and social changes
(b) Economic effects of technology
(c) Technology and plant level changes.



TQM and BPRE both search for excellence in serving the customers. TQM seeks to improve essentially what is good but BPRE seeks to reject what is irrelevant and starting afresh. BPRE helps to cut down costs, eliminate waste and improve its products quality.

Pollution:-

Pollution is an unavoidable consequence of industrial production. Smoke, smell, noise, effluents and dust are generated by industrial establishments which install technology and technologies.

The biosphere – the land, air water and natural conditions on which all life on earth depends noise, effluents and dust are generated by industrial establishments which install technology are technologies.

The earth's absorptive capacity is especially limited when a single society concencentrate its industrial technology and industrial products too densely in a single region.

Part of the answer to this potential obstacle to further technological development is to invent and use new and less polluting forms of technology and energy.

Human Operator in Engineering Projects and Industries

If we look at the worker as a resource, comparable to all other resources but for the fact that it is human, we have to find out how best to utilize him in the same way. This is an Engineering approach. It considers what the human beings is best and least capable of. Its result will be the organization of work so as to fit best the qualities and the limitations of this specific resource, the human being at work.

The human being has one set of qualities possessed by no other resource i.e., it has the ability to coordinate, to integrate, to judge and to imagine. In fact, this is its only specific superiority, in every other respect whether it be physical strength, manual skill or sensory perception machines can do a much better job.

Emphasis on human approach focuses on man as a moral and social being. The qualities of the person are specific and unique. The human being, unlike any other resource, has absolute control over whether he works at all. The human resource must always be motivated to work.

It has been studied by several experts and found that attitudes of human operators are very important for enhancing productivity and that machine and techniques have little contribution in this aspects. Similarly good morale of the worker greatly contributes to improve productivity.

A manager must create a positive motivation in Engineering projects and industries for the human operators to contribute their best.

In the most completely machine paced operation, the speed and quality of which are determine by the machine, the human operator still retains decisive control.

In the situation of the advanced technology and modern sophisticated machines, a manger must incorporate suitable training programmers for the operators who can gain both theoretical knowledge and practical skill and be able to produce goods or services of desired quantity ad quality and at the optimum cost.

Problems of Man machine Interactions

The human being has control over how well he works and how much he works, over the quality and quantity of production. A man may be satisfied because he really finds fulfillment in it. He may also be with his hob satisfied because the job permits him. A man may be dissatisfied because be is genuinely discontented. But he may also be dissatisfied because he wants to do abettor job and wants to improve his own work.

There are four ways by which we can attempt to reach the goal of the responsible worker, they are careful placement, high standards of performance, providing the workers with the information needed to control himself and with opportunities for participation in responsible position.

The first requirement of effective work in an organiwsation is to form a cohesive group of productive work force. A manager must try to avoid conflicts, if any, within the group.

The work should be organized so that the ability and performance of a worker are exhibited maximum.

The individual motions and their sequence while predetermined by analysis, should be group motions with the individuals arranging them within the group as best fits the group needs changing pleas, for instance, making a two man operation out of one originally designed for one man, etc.

In many assembly line operations the movement of a worker from position to position has proved to enhance performance. The most efficient man machine interaction will produce right quality output at right quality and at the optimum cost.

The problem of man machine interaction arises due to.

1. *Inadequate training received by the operator*
2. *Both attitude and morale of the worker are at poor levels.*
3. *Poor upkeep of the machine.*
4. *Poor industrial relations.*
5. *Poor industrial relations.*
6. *Absence of incentives for higher productivity etc.*
7. *Physical and mental fitness of the worker also influence the man machine interaction.*
8. *Attitude and morale greatly influence the man machine interaction.*
9. *Poor working conditions such a improper mutilation and insufficient light also effect man machine interaction.*
10. *Improper work load also effect the man machine interaction.*

Impact of Assembly Line and Automations

Assembly lines are generally of two types:-

i. Sub-Assembly Line and ii. Final- Assembly Line

i. **Sub Assembly line:-** A product may have two or more sub assemblies. Each sub assembly consists of several components or parts.

Subassembly items are assembled separately in ship and are brought to the final assembly shop.

ii. **Final Assembly Line:-** Here all sub assemblies are joined to give rise to the final assembly ship. Automobile assembly line is a perfect Engineering of human work and exhibits the proper man machine interaction.

A traditional assembly line process can be completely mechanized with significant increases in efficiency and output. All materials handling, machine tending and routine inspection are automatic.

Efficient mechanization and automation help a deal in enhancing productivity and reducing man hours necessary for the output of the final product.

One organizes the motions mechanically so as to utilize the special properties of machine that is its ability to do one thing fast and faultlessly.

The other one integrates operation so as to utilize the special properties of human being, that is, his ability to make a whole out of many things, to judge, to plan and to change.

The modern technology does make possible the output of more goods with same number of people. Automation derives its efficiency and productivity mainly from the substitution of highly trained, high grade human work for poorly trained or semi skilled human work.

It is a qualitative change requiring people to move from work that is labour intensive to work that is brain intensive, rather than a quantitative changed requiring fewer people. And the people required in the new technology to produce a certain output, will be much more expensive people on whose work will depend a good deal more.

The direct impact of more and automation will lead to a production floor without any workers or few workers. These are high productive goods with superior and uniform quality an with the least unit cost of production.

The occurrence of redundancy of human operators due to increased automation will significantly affect the attitudes of workers. In such a situation, the organization may provide adequate training and relocate the workers in the other units or arrange the voluntary retirement with suitable monetary incentives.

Human Centered Technology

The human resource of all economic resources is the one least efficiently used, and that the greatest opportunity for improved economic performance lies in the improvement of the effectiveness of people in their work.

Whether the business enterprise performs depends in the final analysis on its ability to get people to perform, that is, to work. The management of workers and work is therefore one of the basic function of management.

The way the worker works may change the unskilled labourer of yesterday, who contributed only animal strength has become the semi skilled machine operator of to day who has to exercise judgment though of a routine nature when he tends the machine, feeds in material and inspects the product.

He skilled worker has moved from the workshop into the plant remaining a skilled worker or becoming a supervisor or a technician.

This situation has created four new group i.e. clerical staff, workers, professional specialists and managers.

Today we face another major change. The technology premises to upgrade the entire working group. The semi skilled machine operator of to day will tend to become attained and skilled maintenance man, tool setter and machine setter. The semi skilled clerk will become, in many cases, a technician possessing basic training on a par with laboratory technician, perhaps, though still less trained than the tropical plants worker of tomorrow. And the ranks of highly trained technical, professional and management people will swell beyond all experience or expectation.

Still the work will always have to be done by people. There may be no people on the factory floor in a fully automatic plant. Operations requiring repetitive occurrence will be made automatic more and more, eliminating involvement of human operator. But there will always be large numbers behind the scenes designing equipment product and process programming and directing, maintaining and measuring.

Indeed, it is certain that the decrease in the total number of people needed to obtain a certain quantity of work will not be the really important development.

No matter what kind of work men do, whether they are skilled or unskilled, production workers or salaried clerks, professionals or ran and file, they are basically alike. There are, indeed, differences between works according to kind of work, age, gender, education, but basically they are always human being with human needs and motivation.

Ethical issues in Engineering Practice

The ethical issues in Engineering Practices can de discussed as follows—

- **a)** The responsibility of an Engineer Extends to the profession & its members (shareholder, agent, supplier and contractor), community served by them & to the environment.
- **b)** The sense of belongingness to this honorable profession promotes an Engineer to uphold the dignity of this profession by upholding its ideals & not liable for any misconduct & practices.
- **c)** The duty of Engineers is to protect the environment from air, noise water, soil pollution & ecological order.
- **d)** They should be conscious that any activities on their part should not break the laws of the land. They should contribute to the socio-economic development of the land.
- **e)** Engineering activities affect health & safety of the human beings; so, Engineering professional ethical codes have higher priority to safety in design & operation for processes & products.
- **f)** Several laws have been posed by Government to ensure safe Engineering practices. It is moral responsibility to Engineers to admire them & follow them rigidly.
- **g)** There is a trade off between safety & cost for production for goods & services.
- **h)** Now-a-days, bribery & corruption have become a way of life and same is true of professional engineers & managers.
- **i)** Code of professional ethics condemns bribery in all its forms.

Conflict between business demand & Professional ideals

The main objectives of business is profit maximization and consistent growth. A business manager who is able to achieve the objective is regarded efficient.

The ethical burden of deciding corporate policy matters normally rests upon the top management. The ethical content of the management's polices can have enormous impact throughout the company it can set an ethical tone and send strong signals to all employees as well as stake holders.

In most of the companies, ethical dilemmas crop up in purchasing departments where strong pressures are felt to obtain the lowest possible prices from the suppliers. Suppliers also sometimes are tempted to obtain lucrative contracts by adopting unethical means.

Bribes, kickbacks and discriminatory pricing are temptations to both parties,

Marketing is another feels where ethical behaviors of a manager are in conflict. Pricing, promotions, advertising, product information, and marketing research are potential areas of ethical dilemmas.

The business world faces plenty of decisions that need one's conscience. Almost all of us, at some point of time, encounter cheating on taxes, jumping traffic signals, inflating expenses account over stating damages for high insurance claims, making a counting jugglery in the annual balance sheet to show higher profit.

Also a designer who finds ways to reduce material cost is promoted versus the engineer who places product quality and safety above coast considerations.

All these above are widely understood to be wrong and therefore easier to resolve. What reached to our most inward and profound value system are the right versus right variety, which one can not solve merely pretending that one is wrong, and justify the other.

Some of the conflicting issues may be stated as follows:

1. Is it right to take away the agricultural subsidies from the poor farmers, just because the system in administration is not able to distinguish between rich and poor ones.
2. There is absolutely nothing wrong in finding out, all you can do about your competitors cost and prices. However, it is just as right to obtain information through the proper channel.
3. Is it right to conserve forests in a disaster are where people have to depend on cutting down trees for their daily survival?

We face such conflicts between business demands and professional ideals many time.

Right versus wrong choices offer no such depths. The closer we get to them the more easier we begin to smell they can be called moral temptations against moral dilemmas for right versus right only.

In such cases of conflicts, the business managers consider the following points taking a right decision:

i. A company which is perceived by the public to be ethically and socially responsive is respected and held at high esteem.

ii. Values are supposed to be a common language to bring leadership and its people together. Values give management credibility with employees.

iii. Ethics and profit can go together. A company which is inspired by ethical conduct is also profitable one. Value driven companies are sure to be successful in the long run.

iv. Low can not protect society but ethics can. Ethics are important because the government, lawyers and laws can not do everything to protect society. People in the industry often know the dangers in a particular process plant better than regulatory agencies. Father, government can not always regulate all activities which are harmful to society.

v. Where law fails, ethics can succeed. A value driven and ethics oriented management takes measures to prevent pollution and protect workers health even before the enactment of relevant laws.

vi. Codes of professional ethics:

The world is full of values, without answering the question "what is right". This question comes to a code of ethics and some of them are useful to mention such as fairness, honesty, respect for human dignity and respect for environment.

A need for a universal code of ethics according to German Theologies Hans Kung examines commonalities of the world's religions.

Social & Ethical Responsibilities of Technologists

(a) Dignity of human life

Human beings, by the fact of their existence, have value and dignity. Human beings have a right to live and we have an obligation to respect the right to life. Human life is to be preserved and treated as sacred.

(b) Autonomy

All persons are intrinsically valuable and have the right to self determination. We should act in way that demonstrate each person's worth, dignity and right to free choice.

(c) Honesty

The truth should be told to those who have a right to know it. Honesty is also known as integrity, truth telling and honor.

One should speak and act so as to reflect the reality of the situation.

(d) Loyalty

Promises, contracts and commitments should be honored. Loyalty includes promise keeping. Keeping the public trust, good citizenship, excellence in quality of work, reliability, commitment to, and honoring, just laws, rules and policies.

(e) Fairness

People should be treated justly. One has the right to be treated fairly, impartially and equitably. All have the right to the necessities of life, especially those in deep need, and the helpless.

Justice includes equal, impartial, unbiased treatment.

Fairness tolerates diversity, and accepts differences in people and their ideas.

(f) Humanness

Humanness has two things:

(i) Our actions ought to accomplish good.

(ii) We should avoid doing wrong.

We should do good to others ad to ourselves. We should have concern for the well being of others; usually we show this concern in the form of compassion, giving, kindness, serving and caring.

(g) The Common Good

Actions should accomplish the greatest good for the greatest number of people.

One should act and speak in ways that benefit the largest number of people while trying to protect the rights of individuals.

Codes of Professional Ethics

There five basic common commands to human beings, which also have applications in the business world, in politics:

(I) Do not kill
(II) Do not lie
(III) Do not steal
(IV) Do not practice immorality,
(V) Respect parents and teachers and love children.

Other codes of ethics for the professionals may be recommended as follows:

i. Conduct themselves professionally with professionalism, honesty, integrity as well as high moral and ethical standards and to be fair and transparent and to be seen so by others.

ii. Do not derive any benefit from any information about the company of Group which constitutes in side information.

iii. Report to the management any actual or possible violation of the code or an event that the employee becomes aware of, that could affect the business or reputation of the employee's company.

iv. Permit employees to purse an active role in civic or political affairs as long as it does not affect the business or interests of the company or the group.

v. It is the responsibility of the professionals to ensure that goods and services they produce must conform to the commitments promised to customers.

vi. Professionals must provide best possible service and treat with respect and fairness to customers.

vii. Professionals should use knowledge and experience for upgrading the quality of life. They must understand and respect the needs, concerns and welfare of the community and society.

viii. Do neither give or take any illegal payment, gift or comparable benefit to obtain favors.

ix. To comply with all regulations regarding the preservation of the environment.

x. To engage only in activities beneficial to the employee, society and national interest of the country.

Whistle Blowing and Beyond

Whistle blowing is an attempt by a member or former member of an organization to disclose wrong doing in or by the organization.

Whistle blowing can be internal or external. If the wrong doing is reported only to those higher in the organization, it is internal whistle blowing. When the wrong doing is reported to external individuals or bodies such as government agencies, news papers or public internal groups, the whistle blowing is said to be external.

But blowing the whistle is often a brave act of conscience that can carry heavy personal costs. It has been seen that normally the whistle blower is a loyal and conscientious employee of the organization having strong belief in universal moral principles.

In most of the cases, the whistle blowers have been harassed by the higher authorities in the organization and/or have been isolated and subjected to feelings or depression and powerlessness.

It is sometimes argued that external whistle blowing is always wrong because employees have a contractual duty to be loyal to their employer and to keep all aspects of the business confidential, when an employee accepts a job, the argument goes, the employee implicitly agrees to keep all aspects of the business confidential and to single mindedly pursuer the best interests of the employer.

The whistle blower violates the agreement and thereby violated the rights of his employer.

Although part of what this agreement asserts is true, the conclusion is false. It is true that an employee enters an agreement to act on behalf of his employers in all matters pertaining to the business and that the employee also implicitly agrees to keep trade secrets and other proprietary information secret.

However, this agreement is not unqualified, and it does not impose on the employee unlimited obligations toward his employer.

Agreements and contracts are void if they require a person to do something moral. Consequently, if an employee has moral obligation to prevent other people from being harmed and the only way to prevent the harm is by blowing the whistle on one's employers, an employment agreement cannot require the employer to remain silent.

In such a situation, the employment agreement whole be void because it would require the employee to immorally fail to do who he is morally obligated to do.

Thus, external whistle blowing is justified if it is necessary to prevent a wrong that one has a moral right or duty to prevent, or if it will yield a benefit that one has moral right or duty to provide.

However, in case of external whistle blowing, the employee's right to freedom of speech is limited by the right of the employer because of the employment contract.

And that the employee should pursue the employer's best interest provided the employee is not thereby forced to do anything immoral.

Thus, the external Whistle blowing can be justified only if other means such as internal Whistle blowing of preventing a wrong have been tried out have failed, and only it is harm that is to be prevented is much more serious than the harm that will result to other parties.

For example, when a company's involved in activities that can result is substantial health injuries to the working personnel, who have a right to be protected from such injuries, and no one else in the company is willing to bring these activities to a health then a morally conscientious employee has an obligation to prevent the wrong even if this means resorting to Whistle blowing.

It must be realized that the occurrence of justified external Whistle blowing generally indicates a failure in an organization's internal communication system. This shows the absence of company mechanism that enables concerned employees to effectively voice their concern through internal Whistle blowing.

Most organizations in India have no clear policies or procedures that allow employees to voice their moral concerns outside the standard chain of command.

When employees encounter waste, fraud, abuse or managerial ineptitude, they have no way of taking their concerns to those within the organization, who can do something about the issue.

Moreover, even when companies have open door policies that ay that employees can take concerns to those higher in the organization, fear of reprisal will often prevent them from going over the and of their immediate superior. As a result, the frustrated and morally conscientious employees either leave the organization or take to external Whistle blowing.

The main factors for Whistle Blowing are:

i. Whistle blower has moral motives or he is ethical.
ii. Whistle blower acts in accordance with his responsibility for avoiding/exposing moral violations.
iii. He is loyal to organization or customers.

The Whistle Blower is Described:

i. For prying into propriety elements of business, tactics for spreading disunity, not courageous, not deserving of gratitude and protections, corrosive, impermissible.
ii. Whistle blower is supported.

Appeals to loyalty are misleading, competition is not prevailing virtue, it is OK when company is harming the society. Whistle blower has an obligation to society and may bring retaliation.

iii. Who protects the whistle blower?

Law could protect the grief, sacked, demoted socially ostracized victim. In civil society, there is a better protection. Public supported Arun of Pune Municipal Corporation, when his whistle blew on Pune Municipality's unethical practices. Public also supported Khairnar when his whistle blew against the corrupt activities of Mumbai Municipality.

Case studies:

i. Baba sheb Ampte and Medha Patkar, the renounced social activists had successfully organized public mass movements against the construction of the Narmada Dam, which would unsettle thousands of villagers and submerge large areas of land, after it is built to the originally planed height.

ii. Ralf Nader was pioneer for consumer movement. He had championed causes for defective vehicles, waste of govt. funds, dumping of pollutants and misuse of pension funds and adulteration by unscrupulous business persons.

He had championed against the cause of non enforcement of pesticide law, suppression of occupational diseases of workers employed in hazardous Asbestos and chemical industries.

Value Crisis In Contemporary Society

A healthy society is built on good values. Indian society is based on democratic principles and secular belief.

The values of a good society in India, took a strong blow during Babri Masjid / Ayodhya and Godhra / Ahmedabad episodes in the early nineties and during the Gujarat incidence, when the secular fabric was torn apart.

Many a time religious cover is used to justify some vested fanatical interests.

The waves of violence and reprisals and counter reprisals have caused permanent scars.

Most people experienced the break down of law and order. It was followed by the collapse of social and legal structure and of so called orderly society. This was a society where neighbors had lived for years in a spirit of the religious community to which they belonged. It was a normal meltdown.

The values of the Indian society not only of the rioters and selfish politician but the entire nation needed rethinking.

The community depends upon a common set of values. It is even enshrined in our constitution that we are a secular nation and the right includes religious freedom and right to worship, among others.

When these values drain away, communities exist only superficially with deep under current of hatred and communal prejudices.

Similarly, during the emergency enforcement period by late Prime Minister Mrs. Indira Gandhi in the late seventies, the democratic values were ignored.

Value crisis in society rises, when people see for themselves that businessmen maximize their profits from income tax evasion, smuggling, speculation, custom duty evasion, hoarding and monopoly and adulteration etc.

Values crisis in society arises also when a manufacturer becomes selfish and wants to make more profits and does not want to spend money in treating toxic effluents or toxic gas before they are discharged to surroundings.

The values in society are upheld when people bear the responsibility of fulfilling obligation, following proper procedures, doing the right thing, adhering to moral standards determining ethical values of actions.

Actions are morally right irrespective of their consequences, for secularist it is right to keeping promises, for the religious it is right to obey TEN Commandments, the Fiat or The Qumran, regardless of personal costs or benefits.

The globalization, privatization and liberalization of Indian Economy which started into eh mid nineties, have opened the flood gates of consumerism and the corruption and wrong doings of individuals the growing importance of materialistic values of life has been down playing significantly the other life values like the moral, spiritual and aesthetical.

The selfish and corrupt motives of stock brokers like Harshad Mehta and Ketan Parekh during the last decade have besought miseries and ruined many middle class families.

The selfish individualistic profit motives of the real estate builders have created concrete jungles in towns and cities and have destroyed the aesthetic values of nature.

Further examples of decline in the value system in the individual levels may be given as follows:

1. *The adoption of dubious standards of judgment for the rich and poor by the ethics class and bearcats.*
2. *Not being conscious about one's duty and responsibility the doctors and nurses ar ignoring the interests of patients and teachers are ignoring the students' necessities.*
3. *The elected members of assemblies and parliament hardly look after the welfare of the people who have elected them.*

The values crisis in the academic field is exhibited with the little evidence of virtues like intellectual honesty, humility and objectivity which were earlier considered the useful hallmarks of a truehearted person.

Also, the characters of politicians have been tarnished much by corruption, scams and nexus with anti socials.

Nature of Values

Values have some principles and fundamental enduring beliefs. We need values to become ethical.

Values can be of individual, societal and of corporate.

Values govern behavioral choices. Core values can not be dictated and are difficult to change

A vegetarian can not be forced to change his eating habits. A philanthropist can not be asked to quantify his time values.

If Mahatma Gandhi practiced ahimsa instead of all odds happening around him, it was his individual core value.

Similarly if a society strongly condones bride burring or suppression of women, it is a core value of the society and the members of the society take pride in stating that they uphold an important core value.

A core value transcends mundane existence and provides the organization with a sense of well being, pride and confidence. Existence of such values in explicit form enables managers to take compel values decisions.

Many reputed companies are against the employment of child labours in their organization, thus it is one of their core values.

Moral character, self discipline, truthfulness, courage and as himself are all example of personal values.

Practice of religion, vegetarianism and respect for superiors may be regarded as societal values.

Many Indian companies have set examples of good corporate governance and have facilitated the process of transparency and accountability.

Japan's economical success may be attributed to their upholding values of religion and the Japanese have combined spiritualism and materialism and have successfully adopted value driver holistic approach in management and organization.

Value Spectrum of a 'good' life

Creative thinking is one of the most prized endowments of human beings. It has always prompted great minds to dream of and to create visions of a good life. These dreams propel the onward march of human civilization. It is a continuous, on going process. Every generation has the responsibility to think, to dream and to articulate the general contours of the good life it wants. Civilizations decay when they stop dreaming. The realization of good life also deans into reality. There are differences in these dreams over different individuals, groups and cultures. Some of these differences are matters of details, some more fundamental. Yet, there is large measure of commonality in the conceptions of values which constitute a good life. In the following paragraphs we try to outline the picture of a good life in terms its prominent value dimensions.

A good life must be free from wants and deprivations. The basic material needs of food, clothing, shelter, health care, etc. must be fulfilled. A good life should also have an adequate level of material decencies to provide material comforts and conveniences for the enjoyment and enlargement of life. Mere biological level subsistence and enlargement of life. Mere biological level subsistence, and dawn to dusk struggle for eking out a living, cannot be called a good life. There should be adequate space for relaxation and recreation. Values associated with the material aspect of living will be called material values.

A good life can be lived only in a good society. Such a society is organized to achieve peace, harmony, well being and growth of all. Its economic and political life is governed by the principle of justice and equality. This is necessary to ensure social cooperation for production of material and social goods, and an equitable sharing in the produce of this cooperation. In a good society individuals are assured of their human rights, a dignified way of earning a livelihood, and freedom to grow to their full potential. These are termed societal values.

A person should have emotional maturity and intelligence, and a sound mental health to lead a good life, life should be free of psychological conflicts and stresses, Exploration of these concepts will be done under the heading of psychological values.

Creation and enjoyment of beauty is an essential part of a good life. A defined aesthetic sense is the hallmark of a cultured person. However, it needs conscious cultivation to develop a taste for appreciating beauty in art, nature and life. Values related to this aspect of life are called the aesthetic values.

A good life for all can be assured only on the basis of personal virtues, ethical sensitivities and moral conduct of individuals. A self centered, immoral life, devoid of sense of duties and responsibilities towards others, cannot be called a good life. A good person must be a moral person. His personal conduct and social interrelations must be based on ethical principles. In fact, ethical and moral values occupy the centre stage in good life.

The vision of good life, and the understanding of its different value components, is based upon certain conceptions of the true core of human nature and personality, the fundamental truth of external reality, the ultimate purpose of life, and the rightly place of questions lead to a metaphysical understanding of life and reality. Beliefs and convictions regarding these matters give rise to a set of spiritual values which color very aspect of our life.

All these different values go into making a good human being and a good human society. Therefore collectively they constitute human values. However, the term human values is also used in more specific senses one of them is the value of humaneness, feelings of empathy, and sensitivity for human suffering and pain. Humanism uses the term to signify the importance, dignity and centrality of human person in the whole scheme of values, overarching these and other values noted in previous paragraphs, are a set of fundamental human values which are characteristically human. Their realization makes us fully and truly human. These are the values of freedom, creativity, love and wisdom. We shall discus them as a separate category under the title human values.

We can thus put the different value dimensions of a good life into the following seven categories:

1. Material values
2. Societal values
3. Psychological values
4. Aesthetic values
5. Ethical values
6. Spiritual values
7. Human values

These value categories are very much interrelated and constitute a continuum. Yet they have distinctive features and therefore merit examination under separate categories. They are all necessary for a good life. Therefore emphasizing some of them at the cost of others is not very desirable. In the more traditional understanding of values there is a tendency to focus only on the ethical and spiritual values, and to underplay other values. Sometimes, spiritual values are made out to be the values. However, it is the realization of this whole value spectrum in an individual which constitutes the full flowering of human personality. Only such good persons are able to enjoy the fullness of life, enable others also to do so, and thereby help cerate a good society. Borrowing worlds from a contemporary champion of human values, we can say that the good life is "a many splendoured mansion",

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Psychological Values: Integrated Personality, Mental Health

Value system is a frame work of personal philosophy which governs and influences the individual reaction and responses to any situation. Personal values shape influence and behavior. It has been found that manager in an organization give importance to various elements of occupational values such as using special ability and talents, originality and creativity, social states and prestige and exercise authority etc.

Socio-psychological factor such as one's parental background, the content of one's experience concerning decision making role seen to go with occupational goal values.

Many Indian managers believe that there are generally some acceptable unethical practices in business, Such practices are in terms of nepotism, bribes, gifts and personal favors, unfair competitive practices, dishonesty in customer relation and personal benefits.

The reason for unethical practices are multidimensional: political, economic administrative and intuitional,

The psychological value system indicated the extent to which a manager accepts or resists organizational pressures and goals. Different people placed in similar situation react in different style.

This difference may be because of a variety or reasons but personal value system play a very significant role in shaping human behavior which is responsible for making an integrated personality.

Executives in newer places experience a state if transition stress and ambitious executives experience work stress and a mental state of disequilibrium is created which affects the mental health.

When the mental health is in bad state, the person exhibits restlessness by irregular movements and behaviors. Psychological reactions such as anger, anxiety, depression, nervousness, irritability, tension and boredom are normally exhibited in one's behavior.

In his theory of motivation, Abraham Maslow has given a set of human needs arranged in hierarchical order. A human being after fulfilling the basic physiological needs desires to obtain psychological needs containing safety and security, belongingness and love and the self esteem needs.

Self esteem are largely fulfilled by acquiring skill, competence and expertise in the field of knowledge and profession.

The aesthetic needs and self actualization needs follow the fulfillment of psychological needs described above.

A person fulfils aesthetic needs through creation and enjoyment of beauty. The growth of rat, music, poetry, literature and classical dance has mainly possible through people's aesthetic values.

Many Indian corporate houses like Birlas, ITC, Bajaj and Singhanias have contributed much for the development of fine art and culture and Sangeet Academy.

The great artist like Pandit Ravi Shankar, Pandit Uday Shankar, Ustad Amjad Ali Khan, and Mrinaline Sarabhai and other are the persons with the highest cultural values. A person's highest level of need is the self actualization which exhibits in the fullest development of human hood having utilized the complete potentials within themselves to the highest degree of achievements.

Thus, we can regard Newton, Einstein, Tabindra Nath Tagore and Mother Theresa as self actualizes.

(a) Mental Health: A good mental health helps a person to possess positive capacity for living and enjoying a good life. The various types of mental health are as follows:

1. Efficient perception of reality
2. Self knowledge
3. Ability to exercise control over one's behavior
4. Self esteem and acceptance i.e., self actualization
5. Ability to form affectionate relationships
6. Productivity i.e., utilizing time and energy for useful and productive activities and this is the criteria of a mentally healthy person.

Continued practice of self discipline, observance of good virtues, self contentment, religion, concentration and meditation etc give rise to good mental health for a human being.

Societal Values

The modern search for a good society, justice, democracy secularism, rule of law are societal values in Indian Constitution:

Indian law is designed to incorporate ethical values of distributive justice, democratic and rights, A typical example is negotiable instruments Act – it holds that once a promissory note is signed, it is assumed that it will be done with mutual consent.

Beyond the Indian penal Code, the society can follow the ethical nad unethical conducts of persons.

Moral philosophies are designed primarily to prescribe how human should behave. They have limitation of universal application to organization and business in to day's world.

Gandhiji, Karl Marx, Mahavir, Swami Vivekananda, Christ and Islamic teaching are being kept in mind while defining a good societal and society values.

Muslim countries have, in effect applied Islamic banking principles in their financial dealings. Gandhi's teaching have been evident in actual interpersonal dealings in a society. Jain teachings are also being followed in may Indian communities.

Jain taiths and traditiona were the source of Gandhiji's concept of trusteeship. It urges that unjust laws be disobeyed.

Ethical standards fall when individuals work together in a group because their impulses are compounded, Rabindra Nath Tagor realized this and often had to tread lonely paths, believing in the ethics of the means rather than the ends.

The head of a business organization feels disappointed whenever he is unable to control the consequences of his actions.

In a business organization, Production executives interact less with the customers and are compelled to act ethically as per rules of the organization.

On the contrary, the sales personnel have to interact with the customers and follow properly designed rules and laws rather than organizational ethics.

The Modern Search for a "good" Society

As described earlier, a good society is such a society which should provide means and conditions for the material growth and encourage and inspire all its members to achieve their full human potential in all dimensions including moral and spiritual.

Thus a modern and good Indian society provides its members the social, economical, apolitical, ethical, human and spiritual values which are necessary for the realization of humanness at personal and societal levels.

The search for a modern and good Indian society become fruitful if the society embraces these essential values which help in nurturing and elevating the goodness of human nature.

In this age of globalization and liberalization, it may become easy for a modern society to encourage the non values consisting of evil aspects of fraud, cheating, violence, robbery, scams and scandals.

A good society should accept certain human values of love, kindness and brother hood and such a society should be caring, sharing and co-operative to all its members.

A good society should promote principles of equality and distributive justice for its members.

The modern search for a good Indian society should be meaningful in the society is not merely law governed; but is governed by higher leer ethical, moral and spiritual values.

Justice

Justice has originated from Latin word 'Justitia' which means join or to bind or tie. Etymologically justice implies the relationship subsisting between man and man. Generally speaking, justice means giving a fair deal, just consideration and treatment. What is due to a person may be measured according to his performance, merit, ability, skill and needs. Each of these criteria hold good in a particular set of circumstances.

It is a difficult task to give a precise definition of the term 'justice' for the following reasons. First, the term 'justice' is given different meanings by different people at different times.

Second, the idea of justice is a dynamic affair. As a result, its implications change with the passage of time. What was justice in the past may be injustice today or vice versa.

Principles of Justice: There are four different Principles of justice.

1. Distributive Justice: It is based on the principle of fairness. In distributive justice state seeks to distribute the benefits and burdens amongst its citizens. It ensures justice by allocation of social benefits as well as burden on all people of society.

2. Compensatory Justice: Compensatory justice concerned with compensating the party injured by the wrongful act. Most people agree that the injured party should be returned to the condition that existed before the injury. This includes necessary medical treatment and services and goods that are treated to rectify the injury. The compensation should be equal to the loss suffered by the injured party. However, problems occur when it is not possible to provide complete compensation, for ex, a life lost cannot be restored.

3. Retributive Justice: Retributive justice is concerned with retribution or punishment for wrong doing. It tries to restore justice by imposing penalty or compensation for law violated by a person. For ex, the fine imposed on a person for breaking a law is called Retributive justice. It is a negative concept that prescribes a penalty for offence. According to Aristotle, a person is morally responsible for his actions unless he has been forced to take action or is ignorant of the act's negative consequences. A person should not be held responsible if he is unable to halt the wrong doing due to personal inadequacy or powerful external forces.

Just punishment must also fit the crime. The severity of punishment should be in protection to the magnitude of the crime.

Kinds of Justice:

1. Social Justice: Social justice means social equality. Social Justice means absence of all types of discrimination or unjust treatment in a society. It eliminates all social barriers on the basis of sex, religion,

caste, creed, race or colour. The idea of social justice requires the sacrifice of certain rights of an individual at the alter of general interest.

2. Economic Justice: Economic Justice refers to equal opportunities for all to earn their livelihood. Freedom is meaningless if it prevents the achievement of economic justice. To a hungry man, political freedom is an empty word. The problem of today is how to bring about economic and social justice without sacrificing the individual to the ever increasing power of the state.

Simply stated, the idea of economic justice means non-discrimination between man and man on the basis of economic values.

Economic justice can be achieved if there is no barrier to economic opportunities. All are free to choose their profession. In order to achieve economic justice, the statement takes measures to maximize the economic welfare of society. It demands that the state of economy must be shaped in a way that poor man will get more and ore benefits. In other words, a social pattern of society can ensure economic justice.

3. Political Justice: Political justice means that the state must be free from foreign domination. In another sense it refers to political equality to all persons within the state. Each person must have equal right to vote and have equal right to participate in political system. Political equality stands for right to equal participation in the political affairs. In other words, it stands for universal adult franchise without any distinction.

Democracy

Democracy is not a mere form of government. It is a type of State as well as an order of society. Lincoln defines it as government of the people, by the people and for the people. Seeley describes it as a government in which everyone has a share.

Democracy is not a mere form of government. A democratic government implies a democratic State but a democratic State does not necessarily means a democratic government. Democracy as a form of State is merely a mode of appointing, controlling and dismissing a government.

Democracy is a very old form of government. It has derived from two Greek words, Demos and Karta which means rule by the people. The Greeks have identified it with 'people's power' or a system in which "rulers are accountable to the people for what they do therein". Plato explaining democracy termed it as a situation that gives all equal shares of freedom and power. Thus democracy in simple terms can be explained to be rule of the people. The best definition of democracy has been given by Abhram Lincoln by using three prepositions: Government of the people, by the people and for the people. The Utilitarian like Bentham and James Mill justified the case of democratic government in the name of their formula of the 'greatest good of the greatest number' and J.S. Mill did the same on the force of his moral or ethical argument.

The **salient features of democracy** as espoused by the liberals and idealist are as follows.

1. Power is vested in the people and its exercise is given to them or to their chosen representatives accountable to them for their acts of omission and commission.
2. The people have certain natural and inalienable rights which the government cannot abrogate. The doctrine of 'natural rights' as it came to be known emerged as the most powerful instrument at the hands of the democrats who struggled for the rights of the people against arbitrary power of kings.
3. The doctrine of 'natural rights' lost its significance with the growth of the idea of positive liberalism that sought to reinterpret the relationship between individual liberty and state activity. Thus Bentham offered his principle of utility that gave a new interpretation to the justification of democracy.
5. Last but not least, democracy has no substitute in terms of excellence from a practical point of view. Every form of government has its merits and demerits. But peculiar is the case of democracy where merits far outweigh its demerits.

Case for Democracy:

1. Precautionary Reason: Democracy gives us a guarantee that the will of everyone will be duly considered and that no one shall be neglected in what is done by the government. If efficiency were the only test of good government, a bureaucracy or even a dictatorship might be a better from of government than democracy. But efficiency is not the only test. The best government is that which makes the best possible citizens. In an autocracy or bureaucracy individuals suffer here and there without affecting the rest of the community. In a democracy, on the contrary, at least in theory, there is not a single man who can suffer without the rest of the community sharing in his suffering. In other words, autocracy or bureaucracy is partially paralyzed. On the other hand, democracy is considered to be equally sensitive to the suffering of all its members.

2. Psychological Reason: Efficiency is not enough. Soulless efficiency killed Rome. In every form of government we have specialists. But specialists do not know the whole mind of the people. Specialization wraps the intellect. The specialist knows his side of the case well. But he does not know how his prescriptions affect the people at large. It is the wearer who knows best where the shoe pinches. What good government requires is cooperation between the specialist and the layman and democracy best fulfils this condition.

3. Educational Reason: Democracy is a large scale experiment in public education. It tends to create a higher type of mentality among the people whom it governs. All government is a method of education but the best education is self education; therefore the best government is self government which is democracy.

4. Moral Reason: Democracy ennobles the people. It rests on the principal that what a man earns for himself by his own efforts is of much greater value to him than what is handed down to him by someone else. It is the best aid to self help, initiative and cultivation of individual responsibility. Democracy is conducive to the development of all round man. Under no other form of government is self realization as easily possible as under democracy.

5. Practical Reason: Democracy promotes patriotism. Laveleye said, the French people never really loved France until after Revolution when they were admitted to a share in the government. Since then they have become passionate lovers of their country. On the one hand democracy promotes patriotism; on the other hand, it reduces the danger of revolution. Democracy is government by persuasion while every other form of government rests to a greater or less extent on force.

Conclusion: Democracy is not above criticism. If democracy is a bad form of government, we are justified in asking, is there any other form of government which is as good as democracy, if not better? The answer is in the negative. In the language of C.D. Buru's, no one denies that existing representative assemblies are defective, but even if an automobile does not work well, it is foolish to go back to a farm cart, however romantic.

Secularism

The word secularism was first used in the nineteenth century by George Jacob Holyoake. He derived it from the Latin word Speculum meaning this present age. He used it in the context of social and ethical values. Thus, secularism came to be known as a social and ethical system.

The following principles were evolved by Holydake to mark this system.

1. ***Primary emphasis on the material and cultural improvement of human beings.***
2. ***Respect for and search for all truth, whatever be its source, which can be tested in experience leading to human betterment.***
3. ***Concern for this age or world and its improvement.***
4. ***An independent rational morality, which does not base itself on faith in driving commandment.***

According to Oxford Dictionary, "secularism is the doctrine that mortality should be based solely in regard to the well being of making in the present life, to the exclusion of all combination drawn from belief in God".

Indian conception of secularism required that there shall be not state religion and the state shall treat all religions equally.

In the words of Mahatma Gandhi "My veneration for other faiths is the same as my own faith".

We believe in Sarve Dharma Samabhava having equal regard for all faiths and creeds.

Due to preaching of Rama Krishna Paramhans and Swami Vivekananda, Indian Secularism is more evident among the Hindus.

The adoption attitude towards life is an important characteristic of secularism. According to Freud as the influence of science grows on man, the influence of religion declines.

The expansion of modern education also re enforces the values of secularism and militates against religion.

Secularism leads to humanitarianism which stands for peace, good will and understanding help in fostering the brotherhood of man and the unity of the world.

Rule of Law

According to Dicey, the Rule of Law embraces three kindred conceptions.

In the first place, it means that no man is punishable or can be lawfully made to suffer in body or goods except for a distinct breach of law established in the ordinary legal manner before the ordinary courts. There should be an absence of arbitrary power in the hands of the executive and of nay discretionary authority in the matter of arrest or of temporary imprisonment.

In the second place, it means that no man is above law, but that every man whatever his rank or condition, is subject to the ordinary law of the realm and amenable to the jurisdiction of ordinary tribunals. What is law legal right and legal obligation for me must hold equally as such for all citizens.

In the third place, it means that the general principles of the constitution are the result of judicial decisions determining the rights of private persons in particular cases brought before the courts and thus the constitution is the result of the ordinary law of the land.

Now let us analyze a little more closely the postulates of Rule of Law as explained by Dicey. As regards the first postulate, it must be noted that in all civilized governments governmental powers are derived from law. Even Hittler got sanction for his powers from the Reichstag. If the executive is clothed with arbitrary powers by the law-making authority, it is future to say that there is rule of law.

As regards the second postulate, by 'equality' Dicey did not mean equality of rights and duties. Minors, landlords, tenants, partners in a partnership and indeed every class of men have special right and duties. What Dicey meant by equality before law was that an officer was subject to the same rules as an ordinary citizen. Even that is not true. An income tax officer has powers to call for returns of my income from me but no other person has that power. A corporation sanitary inspector may enter my premises and inspects drains but my neighbor can not. What Dicey was really referring to was that if an officer does a wrongful act in the course of his duties, he is liable for damages in an ordinary court of law, just as an ordinary person would be if he performed that act. Experience shows that the administrative courts secure the right of citizens in a better manner and prevent the executive and public authorities from exceeding or abusing their powers. Moreover, the rule of law is subject to so many exceptions in England that the sharp distinction drawn by Dicey between Rule of Law as it exists in England and the droit administrative of the continental countries does not exist in fact. The Public Authorities Protection Act of 1893 gives special protection to officials. The proceedings against government servants must be started within six months after the act and in the event of the suit being unsuccessful; the plaintiff has to pay so heavy cost as to defer prosecution. The head of a govt. department is not responsible for the wrongful acts of his subordinates, though an ordinary employer would be held liable by the courts. The Judges and the trade unions enjoy special immunities which are clearly inconsistent with the rule of law. The servants of the crown have practically no protection against the crown, even though they are unjustly dismissed, no matter what the terms of contract may be. Lastly, in recent times, a system of administrative justice has grown up in England, under which the various administrative boards or officials decide disputes without the possibility of appeal to the ordinary courts of law.

The last postulate of Dicey is also equally liable to criticism. If it is true to say that the Constitution is the result of the ordinary law of the land, it is equally true to say that the law of the land is the result of the Constitution. Every law in enforced so long as it is not altered by the Parliament. The truth is that Dicey was again emphasizing the individualistic theories of the 19th century Whigs. The rule

of law was always a political doctrine and it had no validity after the constitution rejected the concept of Public order and developed instead the concept of Public Service.

Values in Indian Constitution

Democracy, Secularism, rule of law and justice, equality etc. are the societal values enshrined in the Indian Constitution.

The preamble of the Indian Constitution is stated in the following words.

"We, the people of India, having solemnly resolved to constitute India into a Sovereign, Socialistic, Secular, Democratic, Republic and to secure for all its citizens, Justice social, Economic and Political, liberty of Thought, Expression, Belief, Faith and Worship.

Equality of status and opportunity, and to promote among them all Fraternity, assuring the dignity of the individual and the unity and integrity of the Nation."

The preamble as given above clearly states that our country is democratic in all matters. The ultimate source of all power is "the people."

Democracy, Sovereignty, Secularism and Socialism are the basic principles of our constitution.

i. Sovereignty: this is the main feature of the Indian constitution. Indians are completely independent and run their own government.

Our government is capable of making its own decision in internal and foreign affairs.

ii. Democracy: democracy means a government which is run by representatives who are elected on the basis of adult franchise. Each adult, man and woman, elects a representative of his or her own choice, these representatives, together, form the government.

iii. Secularism: The state gives equal treatment to all religions. It does not favour any particular religion. The constitution gives complete freedom to its citizens o\to practice and preach their own religion.

iv. Socialism: The achievements of socialism, based on economic and social equality, is the chief goal of our constitution. It provides equal opportunities in education, employment, justice etc., to all.

Special facilities are given to the backward and the down trodden people.

The directive principles have been incorporated for the establishment of a welfare sate economic disparities, especially, create unrest in the country.

Therefore, efforts have been made to create a society based on social and economic equality.

Rule of Societal values in the Indian Constitution: Indian constitution gives equal treatment to all citizens. The state can not discriminate on the basis of religion, caste, creed, sex, language, place of both etc.

Every citizen has the right to read and write, speak and form any association or union.

The "Right against exploitation" prevents any exploitation in the society and the constitution proh9ibits forced labour.

Under the cultural and educational rights of the constitution, every citizen ahs the right to preserve his or her own culture and language.

The rule of justice under the constitution, enables each citizen to approach his or her fundamental rights. If fundamental rights are taken away by any law enacted by the government, the citizen can approach the supreme court and challenge the action of the government.

In pursuance of above socio political values, the Indian constitution has guaranteed the fundamental rights to all citizen, as illustrated above.

i. Indian constitution emphasis societal values in part IV, which deals with the Directive principles of state policy.

These principles are actually is functions of the state.

1. The state shall strive to promote the welfare of the people.
2. The state shall in particular, strive to minimize the inequalities in income, status etc.
3. The state shall ensure that the ownership and control of material resource of the community are so distributed as best to sub serve the common good.

ii. Indian constitution advances idem on societal values in Article 51A, part IV of Fundamental Duties.

It shall be the duty of every citizen of India

1. To abide by the constitution
2. To cherish and follow the noble ideals
3. To uphold and protect the sovereignty, unity and integrity of India
4. To defend the country
5. To promote harmony and the spirit of common brotherhood, etc.

Aesthetic Values, Perception and Enjoyment of Beauty, Simplicity, Clarity

Aesthetic value of a person is indicated when he or she shows admiration for goodness of any thing e.g. beauty of a garden, beauty of a flower, beauty of a woman or loveliness of a child.

A marketer utilizes the aesthetic value of a product for enhancing its value which in turn may create more demands.

Perception is the basic psychological process and the manner in which a person perceives the environment affects his or her behavior.

Perception, being an intellectual and psychological process, becomes a subjective process and different people may perceive the same environment differently etc. perception is determined by both physiological and psychological characteristics of environment and the sensation exhibits enjoyment f beauty, simplicity and clarity.

Perception correlates, integrates and comprehends diverse sensations and information from may organs of the body by means of which a person identifies things and objects and expresses the joy of beauty, simplicity and clarity.

Perception correlates, integrates and comprehends diverse sensations and information from many organism of the body by means of which a person identifies things and objects and expresses the joy of beauty, simplicity and clarity.

On the contrary, it has been found that absence of aesthetic values tend to develop negative personalities in people who exhibit cruel behavior, rough attitude and resort to unsocial, unethical and inhuman conducts.

The study of value system by various researchers among managers in the Indian companies have shown that professional values system exist in the six types Theoretic, economic, aesthetic, social, political and religious.

Her aesthetic person values artistic and aesthetic aspects of life. The person himself may or may not be creative but his interest is towards artistic aspects of live.

It has been concluded by various management experts that he managerial value system in an India organization dominates in the following order of sequence:

Economic, theoretic, political, social, aesthetic and religious.

To appreciate the nature of aesthetic experience, and the values involved in it according to Indian cultural tradition, the depiction may be made in the following manner:

1. A beautiful object attracts
2. Mind Becomes Pleasant.
3. The beautiful object is lovable an likable.
4. It produces a feeling of happiness.

5. The beautiful object leads to perfect bliss.

Only an aesthetic person can enjoy the beauty in art, music or the full blossom flower. The sweetness of a child and the beauty of a woman are adorable aesthetic values.

Cultivation of aesthetic values is essential for enjoying a good live.

Aesthetic considerations have become important in practical fields like engineering, product development, industrial design, town planning, and interior decoration.

The modern marketing management uses aesthetic appeals in advertising for the sales promotion purpose for various consumer and consumer durable goods.

While adopting cost reduction and value engineering techniques, care is taken to ensure that aesthetic value of the product is not diminished.

It has been seen that an aesthetically designed work place and tools or machines enhance the productivity of workmen.

In the present fast moving age, peoples refined aesthetic sensibility is very important for a good society.

Moral and Ethical Values

Morality's concerned with human conduct in all areas of personal, professional and social life. Its Hindi equivalent, means acting according to nit, i.e. principled conduct. It is a normative attitudinal value and a pattern of behavior aimed at realizing the value of goodness in human life. This moral goodness is a fundamental virtue of a 'good' human being and the basic constitutive principle of a 'good' society. All other personal and societal values acquire meaning only in the glow of moral values. Therefore, moral values constitute the essential core of human values.

Certain types of conduct like lying, cheating, not keeping promises, being cruel, taking unfair advantage of someone's weakness, are clearly immoral. They are universally recognized to be so. Their opposites, truthfulness, honesty, kindness, helping others and treating them fairly, have always been upheld as virtuous and moral. However, in today's complex social, economic and political relationships it is not always easy to recognize the deception, the unfairness, and the unkindness of many actins. This is particularly so in business, professions, politics and other areas of public life. Many a times it is not a black and white distinction between the moral and the immoral. A large grey area lies between these two poles. Usually the practical problems of life need resolution in terms of what is more moral, or what is the lesser evil. All these factors combine to make examination of moral issues fairly complex. Their resolution requires knowledge of general moral principles, and the will and capacity to utilize them for guidance of our conduct.

Nature of Moral Judgment

Our moral sensibilities are largely shaped by the prevalent social customs and religious beliefs. We acquire them unconsciously from the external society and the family in which we grow up. In this section we briefly discuss the nature of customary morality and religious morality, show their inadequacy as is for moral judgementand make out the case for an evolutionary, rational and reflective morality, based on fundamental human sentiments of friendship and love.

Customary Morality

The urge to meet one's needs, to fulfill desires, and to secure individual good are basic human inclinations. However, unfettered individual pursuits produce clash of interests. To resolve them the community must have certain commonly agreed norms to regulated the manner of individual strivings.

Customary morality is based on the past experiences of a civilization and the collective wisdom distilled out of it. It is passed on from one generation to another and thus becomes a part of our common cultural identity. It

promotes social cohesion and harmony by providing a common framework of social relationships and mutual expectations. Social codes give a ready made basis for making moral judgments, and for choosing a course of action when faced with conflicting demands. Many of them e-g, protecting the modesty of women, respect for parents, courteous manners, social co-operation in festivals, marriage and other ceremonies, reverential regard for nature etc., are still very much operative in our society today.

Customary moral codes are usually blind to newer forms of evils. This is particularly so in the present times where the pace of social, political, economic and technological change has become very fast. The categories of customary morality do not apply to newer activities, social arrangements and ways of life. Gandhiji clearly recognized this difficulty. In his typical style of expressing ethical values in religious terminology he characterized the following as the seven deadly sins of the modern times.

(i) **Politics without principles:** In the absence of principles politics becomes merely a game of capturing power. The common adage that everything is fair in live and war is truer still in today's politics. All means fair and foul, cheating, deception, arms twisting, violence, arousal of divisive passions along caste and religious lines, worst forms of manipulation, are being used unquestionably in pursuit of political power. Having acquired power by these means it is being utilized in most brazen manner for personal gains and partisan ends.

(ii) **Pleasure without conscience:** The modern consumerist attitude to life celebrates ever increasing avenues of sensuous, materialistic enjoyments. Unfettered pursuit of pleasures is one of the main causes of the modern value crisis. Restraints on such tendencies can be imposed only be that voice of moral conscience which prompts adoption of the golden mean between ascetic renunciation and over indulgence.

(iii) **Knowledge without character:** In the world of leering today it is the intellectual attainments of wide reading, erudition, oratorical skills, and logical subtlety which are valued most, not the character of the scholar. Scholarship is no longer associated with virtues of intellectual honesty, humility and wisdom. Is not the norm rather, it is an exception. In the professional field knowledge is power. In the absence of character this power is frequently utilized as a tool of exploitation rather than as a means of doing good to the society.

(iv) **Commerce without morality:** The sole objective of modern methods of trade and commerce is to make maximum money. Demands for ethical constraints are viewed as unnecessary obstacles in the growth of economy. It is commonly accepted that wealth cannot be made without recourse to dishonesty.

(v) **Wealth without work:** Modern life provides so many acceptable ways of earning money without putting in honest work for it stock market manipulations, speculative ventures of many kinds, sharp business practices, transfer of wealth through inheritance, etc. their ethicality is never questioned.

(vi) **Science without humanity:** This is perhaps the greatest curse of modernity. Eighty percent of the world's research funding goes to projects related to armament and militarization; to put it more bluntly, on refining means of destruction of human life. Some of the best minds of the world are engaged in this activity. They are respected as defense scientists, and they themselves are proud of it.

(vii) **Worship without sacrifice:** Customary morality applauds the traditional forms of worship and socio religious rituals. It is unmindful of the spirit behind their performance. The sense of sacrifice that is giving up a part of our gains, comforts, and conveniences for the sake of others is not considered an essential part of the religious attitude to life.

Religious Morality

Most of our ethical ideas have come to us from religion. This is particularly so for a traditional society like ours where religion has dominant significance in all aspects of our personal and social life. All religions started as reform movements aimed at moral and spiritual enlistment of humankind. They require individuals to rise above their biological and economic needs to seek higher, transcendental goals. The metaphysical belief systems, dogmas, rituals etc., of different religions have wide divergences but their ethic moral teachings have a large measure of commonality. They have inspired generations after generations to seek higher levels of ethical life, and have produced some of the finest gems of human beings as saints, seers, holy men, full of love and compassion for all living beings.

Reflective Morality

The whole enterprise of search for values is aimed at understanding the nature of goodness and the ways for securing it in life. It is a human enterprise and intensely so. Therefore it must involve all the human faculties, those of thinking, feeling and willing. Ethical principles should not only appeal to our emotional sensibilities but must also be consistent with our reason.

This approach would demand that moral principles and precepts be framed by human beings bases on human reason, taking into account the realities of human life, human aspirations and human capabilities. They be open to rational enquiry, revision and modification in light of changing experiences and realities of life. This humanistic approach to morality, bases on human wisdom, will uphold those moral principles which support human well being, help in the growth of full human potential in all the dimensions material, social, intellectual and spiritual, and which produce a harmonious, healthy social life. A morality based on these larger perceptions is termed reflective morality.

Canons Of Ethics

Ethical canons are principles which have general and universal validity. Unlike specific moral codes applicable in particular situations, these general principles provide guidelines for basic ethical attitude towards all actions, in all situations. They are simple, compact statements which have intuitive appeal to the moral sensibility of human beings.

The first ethical canon is, DO NO HARM. It is a general injunction to abstain from causing harm and injury and is applicable to our actions towards all; family, friends, colleagues, society, humanity, all life forms, and the whole of the natural order.

Merely desisting from causing harm, however, is not sufficient for moral life, as it may mean a passive, escapist attitude towards ethical problems. We need a more proactive, more positive and more forceful ethical canon. It is, DO GOOD. It is a higher level ethical demand compared to the first canon. It requires that we initiate positive action to do good, and that all our actions be directed towards realization of goodness in life, in our own lives as well as those of others.

These two canons of ethics have significance not only for sages and spiritual aspirants. They are equally important for today's professionals as well. For example, highly specialized professionals like scientists and engineers have a moral responsibility to examine the larger social and human implications of their work. An attitude of disinterested neutrality towards the broader consequences of technical work, as is sometimes upheld as the desired virtue of professionalism, is against the spirit of both the canons of 'do no harm' and 'do good'. The two canons ought to be binding for all kinds of institutions and organizations as well. These institutions exert a greater influence on the quality of life today than the activities of private individuals. It is unfortunate that not much attention has been paid towards developing ethical norms for organizational behavior.

The implication of this canon would be that when judging the moral goodness of a contemplated course of action, put yourself at the receiving end and then imagine what its impact would be like. It is the essential virtue of empathy, to put oneself in the shoes of the other and then feel the pinch. If the view from the other end is good then probably the contemplated action is good. However, the examination of goodness of an act would still require a reasoned examination of the problem on the basis of general ethical principles.

Ethics of Virtue

To be good is to be virtuous. Virtues are the ethically approved traits of character. Their cultivation is an essential hallmark of a moral personality.

Our knowledge of virtues comes mainly from the 'wisdom' literature of various religious traditions. However, the social acceptance and the level of admiration commanded by a particular set of personal virtues depends considerably on the socio political ideals of a society. It is equally affected by the level of society's

cultural, moral and philosophical advancement. The Greeks admired courage, justice and temperance as noble virtues. In contrast, the Christians emphasized the virtues of love, kindness, humility and patience. Islam lays greater stress on submission to God, brotherhood and charity. A good Muslim is expected to give two and a half percent of his holdings (not merely income) directly to the poor during the holy month of Ramadan. The four major virtues recommended by Buddha are: Taoism regards living in harmony with the natural order of things, respectful trust towards nature and fellow human beings non competitive and non aggressive attitudes, and humility as the major human virtues in a slightly different vein, Confucianism upholds gentlemanly behavior propriety, and human heartedness as primary virtues.

Although many of the virtues listed above have universal validity, their relative emphasis changes with time and social circumstances. Therefore it becomes the responsibility of every age to choose those personal virtues which it would like to present as worthy of emulation by the individuals. These personal virtues must also have a social orientation. This is because the good life for the individual and the creation of good society are very closely interlined. And the basic foundation for both is the character of individuals. Keeping these factors in view we may propose the following set of personal virtues which need greater emphasis in today's Indian society, particularly for its elite professional classes.

Integrity

The foremost virtue of a good person is a thorough integration of all these three areas of life. Such a personality is the integrated personality, of the 'whole man to live a full life', with peace, satisfaction and happiness. The whole man is one man, the same man at job, in public live and in the family. Many other virtues like truthfulness, honesty, sincerity, trustworthiness, etc., are the external behavioral manifestations of the inner virtue of integrity of the human person. Such an integrated personality will exhibit a transparent congruence between thought, speech and action. It will be free from deceptions and manipulations of all kinds.

Fairness

Fairness is an attitude of justice in all our personal, social and professional dealings. As a personal virtue its primary meaning is to give others what is their due. The 'others' includes all those persons and institutions with whom we come in contact parents, family, friends, colleagues, business associates, school, university, government departments and all other social institution to which we are directly and indirectly related. At a higher level of moral consciousness the 'other' would also include the community, the country, the cultural tradition to which one belongs, even the whole of humanity. The current concern for environment and ecological balance demands that our dealings with nature should also be just and fair. This idea is being developed as the modern theme of 'environmental ethics'.

Concern for others

It has been rightly said that man has become unethical by being conditioned to think in terms of self; self interest, self presentation, self promotion. This obsession with the self robs man of his intrinsic virtue of concern for others. He becomes selfish and exploitative. "Calculation of profits and manipulation of people and their circumstances for personal gains becomes the basis of relationships". Everything and everybody family, friends, colleagues, work place, society, the whole 'system' is looked upon merely as means for advancing one's self interests. Such self sacking, manipulative attitude to human relationship distorts the quality of personal and social life.

Self discipline

Self discipline, or means conscious control over all aspects of human personality: mine, emotions and will power. It means proper restraint over our desires, appetites, passions and impulses. Without reins they enslave us and lead to a life of vices and immorality. Without self restraint, even the learned, well versed in moral philosophy are lured away from the path of virtues and values. Self discipline should not mean forced suppression of all desires. Rather, it should mean giving them proper direction and appropriate expression. For example, sex drive should be sublimated by the noble value of love and regulated by social convention of marriage.

Humility

Humility has been called the mother of all virtues. It is the virtue which guards against the common human failings of conceit, egotism, and arrogance. It could be arrogance of power, money, learning, even of righteousness.

Such arrogant persons have exaggerated notions of their capacities and strengths. Their vanity and bloated ego create difficulties for themselves, for persons around them, and for the society at large.

Courage

When asked by a journalist what he considered to be India's greatest problem, Gandhiji did not say poverty, as was expected. He said 'cowardice'. Perhaps he would have given this answer more emphatically were he to answer it now. Courage is a virtue which is conspicuous by its absence, particularly in today's elite, professional and privileged classes.

Courage is the ability and willingness to risk personal comforts, even safety, for the sake of one's principles, convictions and values. It is the readiness to bear hardships for the sake of upholding a higher cause. It means raising a voice against injustice and exploitation of the weak by the strong, and not buckling under the weight of oppressive and adverse forces. In today's value hostile climate, when many prefer to compromise, to keep quiet, and to retreat into their private citadels of comfort, it takes courage to take an activist stand on important social and moral issues, and to face apathy, hostility and even ridicule for doing so. Courage is also needed to stick to the right path in the face of allurements of various kinds.

Ethics of Duty

It is necessary to be good for being able to do good. Virtue ethics is concerned with qualities f character for being a good person. Cultivation of personal virtues orients inner dispositions and equips the person for moral action. However, this alone is not sufficient for moral life. The internal goodness of character and virtuous thoughts are of little avail unless they are translated into positive and right actions. The moral life demands moral conduct in the social setting. The most important part of this demand is fulfillment of our duties towards others. Each human relationship, be it husband wife relationship, parent child relationship, relationship between friends, neighbors, co workers, acquaintances, requires reciprocal performance of duties for its nurturance. Apart from these one to one relationships we have a multiplicity of individual to group relationships, like duties of individuals to community, to the nation, the whole of humanity, and even beyond that, to the whole of the natural order. Mahatma Gandhi has defined civilization itself as "that mode of conduct which points out to man the path of duty". Examination of the nature of these duties, ad principles of right conduct for their fulfillment, is the subject matter of ethics of duty.

The strongest proponent of duty as the standard for ethical conduct in the modern times is Emanuel Kant. He was impressed by the orderliness of nature. He postulated that like the laws of nature, there are moral laws for the governance of human conduct. Since human beings are rational, purposive, moral agents their conduct must be governed by these moral laws. "Reasojn demands that man act not on the basis of whims and personal likes and dislikes but consistently and impartially, obeying the moral law….. Devotion the dictates of moral law within is man's highest duty". Kant then goes on to develop some general principles for guiding moral conduct. Three of these principles are briefly described below.

(i) The Principle of University

Act as if the maxim from which you act were to become through your will a universal law of nature.

(ii) The Principle of Humanity as an End in Itself

Act so as to use humanity, whether in your own person or in the persons of another, always as an end, never as merely a means.

(iii) The Principle of Autonomy

The moral standards adopted by an individual should arise out of his own convictions. He should be moral out of his own volition, and not because of external pressures and compulsions, like fear of social criticism or the law. Quite a lot of us try to live upon the standards set by others parents, friends, work groups, social customs, and religious authority. We then end up being mere 'social mirrors', devoid of our own moral convictions. The principle of moral autonomy demands that we govern ourselves by self accepted and self imposed moral laws. Of course these are the same laws which are universally applicable to all. It is our moral duty to bind ourselves, our conduct and behavior by these universal moral principles. They should have priority over all other considerations.

Ethics of Responsibility

Both the virtue ethics and ethics of duty deal mainly with the conduct of individuals in the private domain. This is the domain of our personal life, life in the family, amongst friends, relatives, colleagues, and the community we live in. our actions in this domain do effect the collective life of the society but only to a limited extent. As against this, our actions in the public domain have far greater impact on the general quality of life, on the common good and on the human wellbeing as a whole. These actions are in the nature of decisions and choices made by persons who occupy positions of power, e.g. statesmen, policy makers, bureaucrats, professionals, managers, scientists and technologists, educational authorities, captains of business and industry, etc. exercise of power in the public domain means making choices for others. It also means limiting the choices others can make for themselves. Decisions in the public domain may affect vitally the lives of hundreds, thousands or even millions of persons. Those affected may not have any say in making of these decisions. They may not be even aware that the quality of their lives is going to be changed, sometimes drastically, by the decisions of some remote unknown centers of power. Exercise of such power therefore calls for extreme care and sensitivity, together with deeply engrained sense of moral responsibility in the wielders of power. Ethics of responsibility is concerned with the moral problems in the exercise of power in the public domain.

We owe moral responsibility not only to the present generation, but also to the coming generations. In our hurry to create a good life for ourselves, we should not create conditions which will degrade the quality of life of the coming generations. Some of our actions which are cause of concern on this count are, exhaustion of nonrenewable natural resources, degradation of the quality of soil, use of nuncio degradable materials, creation of nuclear wastes, depletion of ozone layer, global warming etc. possibilities of genetic manipulation pose serious threats for the future. Piling of nuclear weapons which threaten to wipe out the very existence of life from this planet is most irresponsible, almost insane, use of science and technology and of the political power of the state.

The sense of moral responsibility combines in it components both from virtue ethics and from ethics of duty. The feeling of moral responsibility is an important virtue of the personhood. As a moral agent one feels accountable for one's actions. This accountability is both to one's own moral standards, as well as to those acceptable to the community of civilized, good persons. Any deviation from these standa4rds generates a sense of guilt or remorse in a morally sensitive person. Simultaneously, it is the moral responsibility of each one of us to exercise due care in all our actions, particularly those in the public domain, to safeguard the collective interests of the community. We have to watch out for possible dangers posed to the common good by our acts of commission as well omission.

THE

END

Work Ethics
And
Quality Of Work Life

This term is primarily used for ethical attitude to work done in the context of employment. Every employer, be it an individual or an organization, expects efficient and diligent performance of duties assigned to the employees. This is a rightful expectation, and therefore meeting this expectation is a moral demand on the employees. A person is paid wages, given a career and a status by the employer. Justice and fair play demand that in return the employee gives out his or her best to the organization. It should be done out of volition, as an inner ethical demand of duty. Shirking work, making excuses for poor performance, finding faults with the organization, etc. are against the demands of work ethics. So is the attitude of giving out as little as one can get away with and extracting as much benefits from the organization as one can. Similarly, the employees also have rightful expectations from the employer regarding their service conditions, avenues for career advancement, and recognition and reward for their work. Meeting these valid expectations is an ethical demand on the employer. In the absence of such ethical considerations from both the sides, employer employee relationship becomes exploitative, with little mutual trust and cooperation. This leads to poor work culture and reduced productive efficiency of the organization.

The second dimension of work ethics is concerned with the sense of loyalty towards the organization. Loyalty means safeguarding and promotion the interests of the organization; at least not harming it in any way. It requires a sense of devotion and allegiance much beyond the routine job requirements and duties. A loyal employee does not promote his personal interests, or those of competing organizations, at the cost of the organization which employs him. He acts as a faithful agent promoting organizational goals even in his personal and social life. Loyalty also means giving organizational needs a higher priority over personal needs. It means standing by the organization when it faces difficult times. A shining example of such a sense of loyalty was shown by the teachers of the Bananas Hindu University in 1930's when the British government stopped aid to the university. On their own initiative the teachers accepted salary cuts and worked for nearly four years at reduced salaries.

Discipline is the third dimension of work ethics. Every organization and work group has, and must have, written as well as unwritten rules, norms and ways of working. Following them in letter and spirit is a part of discipline. Similarly, there is a hierarchy of power and authority at the work place. Those at the lower level of the hierarchy are expected to follow orders, directives and suggestions given by their superiors. Obeying these orders is a part of discipline. Only those who are themselves disciplined in this sense can expect obedience from their own subordinates.

However, discipline becomes a true virtue when it is a part of one's volition, and when accompanied by virtues of mutual trust, respect and friendliness. It loses much of its effectiveness if its enforcement needs constant use of coercive measures. Secondly, the sense of discipline should not mean slavish obedience of even perverse orders, or unquestioned submission to the whims and fancies of supervisors. Nor should it mean suppression of all forms of dissent or voicing of grievances. A good organization must provide appropriate channels for grievance redressed, and for investigating complaints against its higher level executives.

Professional Ethics

While deriving its inspiration from the general ethical principles, professional ethics addresses itself to the problems of conduct in professional life. The modern society needs services of a large number of distinct specialist groups. They range from plumbers, bakers, salespersons, clerks, to managers, engineers and university professors. They have varying degrees of social recognition and status. Some professional groups, like those of lawyers, doctors, engineers, scientists, teachers, command greater respect and authority. They have been called the 'higher professions' or the 'learned professions'. This is because to practice them one needs a university degree, and higher levels of intellectual and professional skills. They are better organized and are more conscious of their professional belongingness, professional image and professional duties. Also, ethical issues arising in the practice of these professions have been well articulated and commented upon. These higher professions have also evolved their separate codes of professional ethics, and some mechanisms to seek adherence to these codes by individual

members. Therefore, in this discussion on professional ethics the word profession is used to designate these learned professions only.

Four centuries ago Francis Bacon said knowledge is power. This is much more true of specialized, professional knowledge of the modern times. Like other forms of power it has great potential for advancing human well being. But if misutilised in an irresponsible or exploitative way it can also cause grievous harm. Wily lawyers, corrupt judges, greedy doctors, irresponsible engineers and insincere teachers are scourge on society. Because of the technicalities and complexities involved in their work, the general public has little knowledge of their professional immorality or incompetence till the actual damage is done: innocents get sentenced; patients die, and bridges collapse. Therefore it is necessary to regulate these professions to safeguard the interests of the society. One form of this regulation is through legislative and legal processes. For example, medical practice is now included under the provisions of Consumer's Protection Act. Similarly, there are a number of environmental, industrial and labor laws to regulate engineering activities. But these can at best check only some of the grossest violations of professional authority. A better way is voluntary self regulation by professionals themselves, particularly through professional societies. These bodies lay down the rules regarding standards of professional practice and professional conduct. Some of them, like the Medical Council and the Bar Council, also have legal powers to take disciplinary or punitive actions against erring members. However, the foundations of professional ethics, like those of ethics in general, are much deeper than the externally imposed laws, rules and norms of professional practice. They reside in the moral sensitivity and moral will of the individual. Being conscious of their collective, social and moral responsibility as organized social institutions, the professions have also evolved distinct ethos towards their professional work.

Industrial hazards and Safety

What are industrial hazards?

•Physical -noise, vibration, heat, cold, pressure, radiation, dust, fires
•Chemical -flammable/explosive materials, toxics, sensitising agents
•Biological -dust, pathogens
•Psychological -workplace practices & systems, payment systems
•New technologies -information & telecommunications techs., industrial /manufacturing processes
•Occupational injuries & diseases -back, RSI, skin, heart, cancer, reproductive/birth, substance abuse.

Hazardous substances

•Obtain material safety data sheets
•Make safety data accessible
•Appropriate labels
•Avoid prohibited substances
•Carcinogen processes
•Employee health surveillance and records

Safety pays, it doesn't cost!!

Expenditure on safe, healthy workplaces are less than the total cost of accidents..

Working Environment issues

•Work space
•Lighting
•Heat & cold
•Noise
•Atmosphere
•Heights
•Electricity
•Confined spaces
•Manual handling
•Fall prevention
•Asbestos
•Fire/explosion

Safety regulations safety engineering

Accidents can and do happen. Workplaces and factories which may use machinery, chemicals, and other potentially hazardous elements, are always possible sites for accidents which may cause injury, or even death.

Aircraft may fail and crash. Safety Engineering attempts to reduce the chances of an accident happening.

As a Health and Safety Engineer you would use your knowledge of many aspects of industrial processes and the way people behave to anticipate and reduce the chances of an accident happening. You would also need to be familiar with health and safety laws and regulations.

Some Safety Engineers work to identify and reduce the risks associated with aircraft design, train signal operation, and key medical equipment, to cite a few examples of many.

Safety Engineering Duties

The typical duties of a Safety Engineer will vary very considerably between types of activity. As a worker in health and safety, you would spend time on the factory floor, looking for potential hazards, and developing procedures to eliminate them.

You would also ensure that personnel abided by the company's safety regulations and that policies were in place which respected legal safety requirements.

Safety Engineering may be applied to the design stage of critical equipment, and you would use your engineering knowledge to asses and reduce the risks of breakdown and failures in systems and machines which might prove disastrous.

This might involve working with models and software to assess materials, structures, and performance in anything from aircraft fuselages to life-critical medical equipment.

Safety Engineering Job Opportunities.

Safety Engineers can find work in various locations. Manufacturing business is a prominent example, but there are also opportunities in areas such as fire prevention, and accident investigation. Concern with safety is high, so your prospects in Safety Engineering should be good.