

Computers Revolution

Essay No. 01

Civilization have flourished in the past and gone on to establish themselves based on the foundation of singular inventions like use of iron or copper or bronze. The singular invention, which has become as omnipresent today, as did the iron and bronze tools in the past ages, is the computer. An invention of miraculous dimensions, computers have revolutionized our lifestyles, mostly for the better, and continue to do so. In less than fifty years they have influenced practically every field of activity. The Computer Age is our new reality.

No one could have imagined that the initial computing machines would so soon be developed into the highly sophisticated present-day computers. And this stupendous revolution has been carried out by the computer without a shot being fired or a drop of blood being shed. Computers have taken up key roles in all fields of activity including agriculture, weather forecast, scientific research, designing, banks and financial institutions, space research and technology, communication and media, medicine, aviation, railways, traffic control, language learning, literature, and entertainment.

A computer is an electronic device that can carry out calculations and process information. Vast amounts of data can be handled effectively and efficiently at a very fast rate.

A computer can virtually carry out any activity but it cannot think, at least for now! It thus requires a human operator and a set of detailed instructions, called a program. The storage unit of a computer is called the memory which can be accessed via an input device—the keyboard. The output and the processed data can be received on a TV screen or in print via a printer. Computers can vary from the very compact laptops to large mainframe systems and supercomputers.

Computers have become indispensable in all areas in which they have been introduced. Industries and business houses would virtually collapse if computers were to be suddenly withdrawn. Right from management, organisation and planning to the actual production, computers are being used at every stage. Robots, which are nothing but computer-controlled arms and hands, are increasingly in use in assembly lines of many factories. They can efficiently carry out monotonous and hazardous tasks. Personal robots have also been developed for a variety of uses including assisting handicapped people in becoming independent and self-sustained. Hazardous tasks like handling dangerous

chemicals or metals at high temperatures can be performed with ease by robots under human supervision.

Automation in banks and railway stations have provided relief to the public and staff alike. Ticketing and reservation have become more efficient and convenient. Business transactions and the high volume of associated data are easily managed using computers.

In the field of medicine, especially in medical diagnosis, computers are being used to locate, and investigate accurately and precisely any abnormalities or diseases. Computers are also vital to diagnostic tests which help in correct diagnosis and the choice of appropriate treatment.

Scientific research and space exploration have also evolved to their present extents with the aid of computers. Complicated problems are solved with an amazing speed and accuracy. This has revolutionized the engineering and technological fields. Not only do computers solve complicated equations, they can also simulate various conditions and predict accurately the behavior of things under such conditions. In this manner computers have made possible inventions and discoveries which would otherwise have been unfeasible. Any space mission and satellite launch relies heavily on computers for precisely calculating and organizing the whole procedure including angles of entry, Velocities required and trajectory. We have been able to gather vital information about distant galaxies and their components with the help of computers.

Computers in communication and media have effectively turned the whole world into a global village. Access between any two points on the earth is possible. Services like e-mail have made it possible for people to exchange data and information. Personal computers have practically taken over the tasks of writing and keeping household accounts. Networks can now be established enabling people to exchange news, data and all sorts of information. Today the entire world is linked through satellites. Art and entertainment have also developed immensely by using computers. Animation films or movies like Jurassic Park would have been inconceivable in the absence of computers.

Use of computers has its negative aspects too, at the individual as well as the social level. Excessive use of computers can damage eyes and long hours of work on the keyboard can lead to joint ailments and spondylitis. At another level computers are being used in developing dangerous and lethal weapons. Misuse of data by people who break into computer networks is also becoming a problem of large dimensions.

Evil or super-efficient, computers are increasingly making themselves felt as indispensable in homes, schools and offices even in a developing country like India. The silent revolution has been efficiently carried out. Computers are here to stay. It is up to us to use them for the benefit and betterment of humankind.

The takeover of computer in the various fields of human activity is almost complete. And it has been accomplished quietly.

Essay No. 02

Computer Revolution

The world is on the threshold of a computer revolution. It is going to be the permanent tool of the modern age. Computers are being used in all the areas today; be it business, finance education, science. They are fast changing the way of work. Computers are, no doubt, designed to play a very important role in future as there is no field of human activity in which the computers cannot help.

Computer technology has made stupendous progress in the last four; decades. It was only in 1944 that Professor Aikens and his" team had designed first ever computer in Harvard University, U. S. A. Since there we have come a long way. Today, the world is the threshold of a computer revolution. In fact, in the decades to come, they are going to play a very crucial role; as there is field of activity in which computer cannot help. Everyday new uses are being found for computers. They are already helping man in a fantastic range of holds-agriculture industry, scientific research, machine design, banks, aviation, space research, medical diagnosis, traffic control and even in literature

Computers have some special features which make them extremely useful to mane-speed; accuracy and storage of information or memory. Computer are designed in such a way that they rarely 111ake errors. Modern computer are machines with a high degree of reliability. We often hear of computer making funny and at times costly mistakes. The culprit, however, is not the machine but the human being who operates the machine. Computed have some qualities which make them superior to man in some ways for one thing, computers never get tired. Also, the same computer can do wide variety of jobs. Besides, being an automatic machine, it can do long jobs with little or no help from a human operator. No wonder computer considered the greatest invention of man. For the first time, man has made machine that adds power to his brain. When manmade machines, he added to the power of his muscles, when he made vehicles, he was adding faster feet just as the industrial revolution brought great changes to the way people worked and lived and changed the human role from being source of power for labour into being it controller of machines, in a similar manner today we are facing a second

revolution, as machines tended by people are being increasingly replaced by computers. Before the industrial revolution people worked mainly on land. The invention of machines meant most people started to work in factories in future, computers are going to make it possible for man to transact business and do the shopping without leaving his home. Aided by computers, man has become capable of feats they had never dreamt of.

Computer have become indispensable in industry and business. They are being extensively used in industry. "They have been installed in business houses, offices, factories, hospitals, banks, petrol pumps, railway stations, etc., and taken the drudgery out of the life of the Clerical staff. Even in a country like India, computers are fast changing Indian way of life and work. The stuffy, overcrowded air and rail reservation officers in most cities are fast being replaced by air-conditioned ones that have neat rows of booking clerks seated behind terminals, punching out tickets rapidly. In commercial and business houses they are keeping track of tiles and vital statistics; reviewing the achievement of targets; chalking out sales strategies, etc. Computers have brought about automation in every field. In fact, they carry out activities and tasks which were formerly thought of essentially as human. This has increased production and reduced the requirement for manpower in industry and business. In fact, computers have wide application in various industries like chemical processing industries, metal industries, packaging, etc. In the last few years advances have been made in the hold of assembly of complex components like in the Automobile industry.

The trend set off a controversy about the impact of automation on unemployment. Will the spread and extension of automation mean economic mm as unemployment rises and productive potential soars? Time alone will answer such questions. However, one thing is certain that in this age pr automation ushered in by the second industrial revolution, nothing is going to remain the same for human life.

Modern medical diagnosis has become more accurate, precise and fast with the help of computers. Some of the most advanced tools are being used in medical research, diagnosis, treatment and investigation. Machines like CAT scan enable medical specialists to reproduce the body slice by slice and prepare films to ascertain the tract location of a disease, function of a particular organ in the body, detect any abnormalities, growths etc. Doctors these days rely, heavily on these diagnostic tests before making a final diagnosis and choosing the course of treatment. These tests help in detecting diseases like ulcers, cancers in early stages and have proved a real leasing to the modern man, who is susceptible to several diseases which were unknown to his forefathers, due to the stresses and strains of everyday life.

The exploration of space has been one of the most exciting developments of this century. Most spacecrafts which have been launched in space in the last 30 years, since the time space age began, have transmitted vast amount of knowledge back to earth. It now does not seem so distant a reality or a difficult dream to realise that one day we shall be able to establish human colonies on other planets with our present techniques and resources. It is only the development and application of computers which has brought man closer to realising his dreams. Besides, satellites which are launched in space are of immense use in communication. They have made it possible to obtain television linkage between distant countries and enthrall T.V. viewers all over the world by taking their favourite programmes or events of world significance right into their living rooms.

Photographs from satellites have helped in the field of agriculture, geology, meteorology. Weather satellites help to give advance warning of any such developments which may be dangerous to human life. India has purchased a super computer Cray XMP-14 from the U.S.A. It has been installed in the India Meteorological Department, New Delhi. It will help in preparing weather forecasts 3-10 days in advance. Besides, it is expected to be useful; in the areas of health, agriculture and solid-state physics. Undoubtedly computers are doing a lot of useful work by controlling special machines? Given arms and hands, a computer can do more physical work. That is precisely what the robots are doing. Today robots are really computers with muscle though a layman tends to dismiss them as mere metal imitations of human with steel claws or hands. Robots can work untiringly. In some of the advanced countries of the world these robots are performing tasks which earlier it was considered only human could do. Robots are being used in industry, entertainment, Space, medicine. It seems possible now that robots will be the servants of future. Already there are a number of personal robots available. In countries like U.S.A. and Russia they are proving of great help to the handicapped, the aged and the mentally retarded. A lot of research is being carried out in this field. People who are conducting the research are trying to make robots more intelligent so that they can think and act rationally like human brain.

Today, there is practically no aspect of civilized life which is not at some stage under the control of computer. In future one may expect that most homes will have a computer terminal just as today they have a telephone. However, one question that is frequently asked is will the computers always be such a blessing? Scholars and others are not so sure. The power of the computer can be misused. It is already being used in needless warfare. In advanced countries, experts are working out ways of preventing misuse of computers. Therefore, to prevent computers from turning against and dominating its creator like Frankenstein's monster, man must use his discretion. Computers will represent no danger to humanity if we do not allow them to make decisions on problems involving moral

issues Moreover, there are activities of human brain which seem beyond the realm of artificial intelligence of computers and robots.

However, whatever may be the advantages and disadvantages of computers, we cannot put the clock back there is little doubt though that the world will sooner or later have to make up its mind to use computer technology only for the benefit and welfare of humanity.