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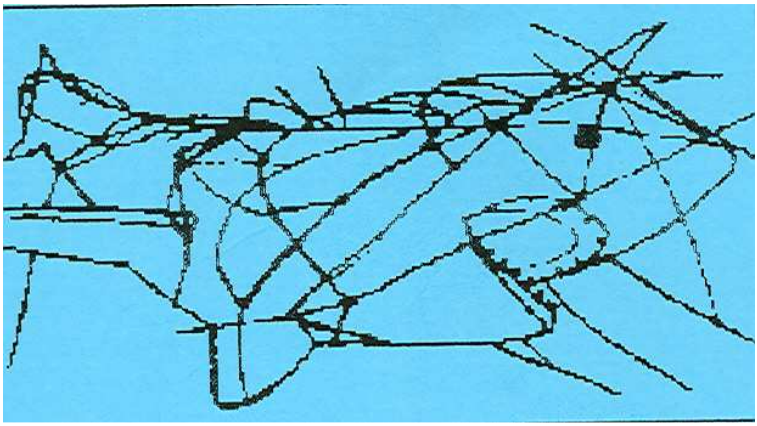
A Marxist look into the Future With Computers



Above is an artist's impression of capitalism after it has been NETed by the National-International Network of Computers

NUSRET SEN

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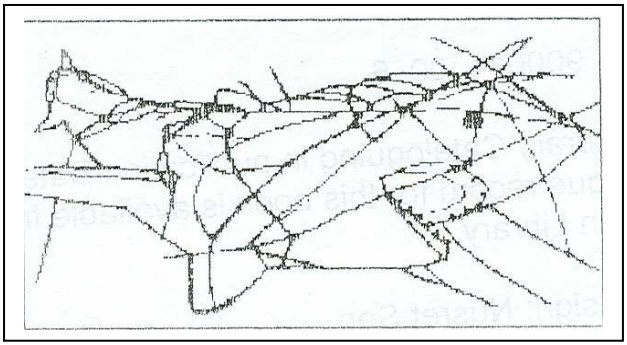

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OR MICROS-CHIPS ARE MACRO-COMMUNISTS

A BOOK BY

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INTRODUCTION

The revolutionary as well as the reactionary effects of computers have been much talked and written about. So far, this work has been done by the bourgeois intellectuals. However hard they try, they can not imagine a world without the bourgeoisie. They can not imagine computers being used under any conditions except that of capitalist conditions. This, that is, their out and out bourgeois prejudice makes it impossible for them to comprehend the incompatibility of computers and the monopoly capitalism. They see the huge potentials created by the computers for the good of humanity and to the detriment of humanity. They come up with all sorts of scenarios. There they get stuck. Appeals to the capitalists are two to a penny.

That will not do.

This book shows that computers are leading to what is called “fully automated production” and would lead to this, in a very short period of time, if we were to produce goods to satisfy the constantly rising material and cultural needs of the people. This tendency of computers is incompatible with monopoly capitalism for the resultant would be a society of abundance achieved through the slavery of machines.

This book shows that capitalists know, and known for many years, what can be achieved using the computers. They can not have “fully automated production”. It means the end for them. So, they use it as little as possible to maximise profits and in the process they create misery and destruction.

The appeals to the capitalists will not do.

One must appeal to those who have nothing to loose from having abundance; to those who have nothing to

loose from “fully automated production”, from the slavery of machines; to those who have nothing to loose from putting an end to the slavery of men to men; to those who have nothing to loose from putting an end to misery and destruction.

One must appeal to the workers.

Unite, organise yourselves, achieve political power and thus bring about what this book proves can be and must be brought about. There is no other way forward. Everything else leads back. Back to barbarism with computers at the service of the barbarians.

— I —

PREMISE

1. SOCIAL LIFE.

Society is a living organism, if we analyse this we see that it is a unity of two related modes of lives: a material life and an ideological life. The life and therefore the development of society is an interaction between these two modes of lives.

In the interaction of these modes of lives it is the material life of the society that is the base while the ideological life of the society is the consequence. The development of, the changes in the former are sooner or later reflected in the latter. The changes undergone in the former demand changes in the latter. Change they must, change they do!

Material life of society itself is an interaction of production and distribution of what is produced. Here, it is the mode of production that constitute the basis for the mode of distribution: whatever is the mode of production such is the mode of distribution. Products are distributed amongst the members of the society in accordance with the prevailing mode of distribution. To change the mode of distribution you must first change the mode of production. Given mode of production leads to a definite mode of distribution and with this the physiognomy of the society, its social structure is determined: either a division into classes or their dissolution, a definite mode of family and an ideological life reflecting these.

Ideological life of society is an interaction of its political and cultural ideas and the political and cultural institutions formed in accordance with these ideas. If the structure of the society determined by its material life is such that it is divided into classes, this is inevitably reflected in the ideological life of the society giving rise to opposed, class political and cultural ideas and institutions and to their struggle.

This struggle of ideas and political institutions for the domination of the society appears as nothing else but this; a struggle of ideas and political institutions. But, behind this lurks the real content of the struggle: a struggle for the domination of the material life of the society.

2. MODE OF PRODUCTION.

In order to live, people must produce, i.e., they must act upon the nature. This is the material side of production. While acting upon the nature to produce things they also act upon one another. This is the social side of production. Production is always social.

In other words mode of production is itself a unity of:

i) Productive forces (these give us the relations of men to nature).

ii) Relations of production (these give us the relations of men to men).

Only as a unity of these two do we have a particular mode of production.

Productive forces constitute the material side of the relationship and consist of a) instruments of production and b) people who operate the instruments of production thanks to a certain production experience and labour skill.

Relations of production constitute the social side of the relationship. Production is always social. Men, working on nature to produce things to satisfy his needs also produce certain economic relations amongst themselves. These may be relations of subjugation or co-operation, depending on the ownership and control of the means of production.

Productive forces are the positive side of the relation. They continually develop. Amongst the productive forces, it is the instruments of production that are the most revolutionary.

Relations of production are the negative side of the relation. They are continually destroyed and renewed. Changes and developments of the productive forces call forth changes and developments of the relations of production. Sooner or later they are negated and renewed with new relations of production.

3. PRODUCTION AS SUCH

If we leave aside the social side of production for the purposes of our analysis, we are left with production as such, men's struggle with nature. Men, using his mental and physical capabilities work upon the subject of his labour with the means of labour, to transform them into things that satisfy his needs.

Let us take a look at the elementary factors of production.

A. SUBJECTS OF LABOUR.

Anything that is spontaneously provided by nature and worked upon by man is a subject of labour. Virgin soil and water are universal subjects of labour. Nature

produce the virgin forest, the ores, the fishes, etc. No labour is spent on them. We simply fell them, mine them, catch them. If, on the other hand, the subject of labour is the product of previous labour it is called a raw material. Trees fell from the virgin forest, ores mined from the depth of earth, fishes caught from the seas for processing all become raw materials, for labour has been spent on them.

B. MEANS OF LABOUR.

Anything that is used by man to work upon the subjects of labour, be it simple or complex is a means of labour. Nature provides these spontaneously. Men's limbs are such; the stones, bones, the earth itself. But, as soon as labour develops, specially prepared means of labour are produced and used to mediate men's work upon his subject of labour.

Some are used to transfer labour directly upon its subject. These are called instruments of production. Those of a mechanical nature we can call the bones and muscles of production; those, that are used to hold the materials of labour the vascular system of production; those, that are used to monitor the activities of these the sensory system of production; and finally those, that control the activities of all, the nervous system of production or the brain.

Some are not used to transfer labour directly on its subject but, without them the whole process would be either impossible or very much restricted. The earth is a universal instrument of this sort. All the buildings, means of transport and communication that are product of previous labour also belongs to this category.

(Both the means of labour and the subjects of labour- raw materials- are also called the means of production).

C. WORK AS SUCH.

The material re-action between men and nature that the men start, regulates and control, this activity of men, is work. Every man has this physical and mental capacity to work which we call labour-power. Its activation is work itself. This capacity, present in all, is not static and develops together with the developments of the means of labour giving rise to a developing labour skill. Work is performed by the people and the working masses are the basic productive force of human society.

Men, using the means of labour works upon the subjects of labour and alter them to suit their needs, the result is a use-value, a product.

4. PRODUCT.

Only in extractive industries are the subjects of labour provided spontaneously by Nature. While all other branches of industry use raw materials which are the products of other industries. What is a product for one is raw material for another.

Raw materials can be the principle substance of a product or they can be an accessory.

An accessory raw material can be consumed by the means of labour; can be used to modify the principle raw material; or, can be used to help carry out the work.

One and the same product, can be used as a raw material in different industries; act as a mean of labour and raw material in one and the same industry; can be the product of an industry while at the same time being

used as a raw material in the same industry; can be ready for immediate consumption and a raw material for an industry. In other words, whether a use-value is a raw material, a mean of labour or a product depends on its role in the production process, while outside of it they are all products.

All raw materials end up being used to produce either the means of labour or the means of individual consumption and, as the means of labour are consumed in the production process to produce raw materials, means of labour and means of individual consumption, the very final result of this process is the means of individual consumption to satisfy men's material and cultural needs, which are consumed by the individual consumer, the result of which is the consumer himself, the humanity.

5. SOCIAL PRODUCT

Therefore, total product of society, when considered in its material form, consists of all the raw materials, the means of labour and the means of consumption produced by the society. The very final result of this process of production is the men himself, the human society. Production cut of from the aim of satisfying men's needs is bound to disappear from the face of earth.

Amongst the means of labour, the instruments of production are the most revolutionary. They continually develop giving rise to the development of the other means of production and to the development of men's skills of labour. **They are also the indicators of the social conditions under which men produce.**

We are therefore interested in the present development stage of the means of labour but, particularly of the instruments of production.

To comprehend this we must go back to the Industrial revolution and see how things stood at the time.

— II —

THE FIRST INDUSTRIAL REVOLUTION

—THE AGE OF MACHINERY—

The era of the First Industrial revolution begins the era of production with machinery in the last third of the 18th century in England, in the textile industry, and ends with the Paris Commune of 1871.

1. MACHINERY

The machine proper is a mechanism that, after being set in motion, performs with its tools the same operation that were formerly done by the workman with similar tools.

There were three elementary factors of production by machinery when it attained its perfected form during the Industrial Revolution

a) **Motor mechanism** that provides the motive power. This was the steam engine.

b) **Transmitting mechanism** that transmitted and transformed the motion provided by the motor mechanism to the working machine. This composed of fly-wheels, shafting, toothed wheels, pulleys, straps, ropes, bands, pinions, and gearing of the most varied kinds.

c) **Working machine** that operated on the subject of labour with its tools using the motion produced by the motor mechanism, transmitted to it by the transmission mechanism.

It is the working machine with its tools that replaces working man with his tools which is the starting point of the Industrial Revolution and remains as the starting point for the transformation of handicrafts and manufacture into production with machinery. Implements, in regard to which workmen acted as a simple motive power, such as a mill, a pump, a bellow, a mortar, &c. are machines even in their manual form, but did not start a revolution in the mode of production even when powered by a motive power other than man or by the steam engine. Nor did the steam engine start the industrial revolution. It is the mechanisation of the operations of the workmen with his tools, leading to the negation of the workmen as the operator with his tools that started the industrial revolution. In other words, the starting point of the Industrial Revolution is the working machine.

As the power of motor mechanism increases it gives rise to a system of machinery where machines of one kind or detail machines of different kinds co-operate being powered from a central motor mechanism. This imparts a technical oneness into the whole system. If the tools can be seen as the organs of a machine, the machines can be seen as the organs of the motive mechanism. A numerical proportion is established between different detail machines and groups of machines which are organised into a planned system of production by planning the location of the machines and connecting them to each other using different materials handling equipment.

The system of machinery constitute the body of a factory, i.e.. the workshop in which machinery alone is used. In the factory, labour, as a technical necessity, is co-operative.

Perfection of production in the factory required the implementation of automation principle and the continuity of production.

2. AUTOMATION OF PRODUCTION

Whenever a system of machinery is driven by a self-acting prime mover we have a huge automaton. But some of the machines required the aid of the workman for some of their movements; some parts of some of the machines required to be handled by the workman like a manual tool. These constituted the shortcomings in the application of automatic principle. As soon as a machine executes, without man's help, all the movements requisite to elaborate the raw material, needing only attendance from him, we have an automatic system of machinery, and one that is susceptible of constant improvement in its detail. As soon as the workmen as the operator working with his tools is eliminated from the process of production and all his operative action is taken on by the working machine with its tools and this machine is powered by a self-acting prime mover we have automatic production; as soon as we have such a system of machinery in a factory, we have an automatic factory. The fact that these machines must be watched by the workman and their mistakes must be corrected does not negate the fact that automatic principle is being applied. These constitute the details that can be further improved.

3. CONTINUITY OF PRODUCTION

Binding together different detail processes, achieving continuity of these processes is an imperative for machine production. In the co-operation of machines of

various kinds, each detail machine supplies raw material to the machine next in order; and since they are all working at the same time, the product is also going through the various stages of its fabrication, and is also constantly in a state of transition, from one phase to another. This process becomes more of a continuous one the less the raw material is interrupted in its passage from its first phase to its last; in other words, the more its passage from one phase to another is affected, not by the hand of man, but by the machinery itself. Continuity of production attains to the part of production process where the working machine is not modifying the raw material- this is the domain of automation. Continuity of the production process concerns the transition of the raw material from one phase of its modification to the next. Continuity of production requires the elimination of man from this process.

4. DEVELOPMENT OF INDUSTRY, TRANSPORT AND COMMUNICATIONS

A radical change in the mode of production in one sphere of industry involves a similar change in other spheres. This happens at first in such branches of industry as are connected together by being separate phases of a process, and yet are isolated by the social division of labour, in such a way, that each of them produces an independent product. But more especially, the revolution in the modes of production of industry and agriculture make necessary a revolution in the general conditions of the social process of production, i.e., in the means of communication and transport. Thus was developed the river steamers, railways, ocean steamers, and telegraph.

This process also led to the development of mining, metallurgical and chemical industries.

Production by machinery established a suitable technical basis for itself when it began making of machines by machines. Separation of this, the engineering industry from the rest and its perfection within the available technique constitutes the culmination point of the first industrial revolution.

In Machine production, the process is examined objectively, without regard to it being executed by human hands. Its division into detail parts and binding them into a whole is solved by the use of machinery, chemistry &c. and replacement of natural forces for human force is a necessity. Science and technology is placed at the service of production. Therefore at the service of those who own the means of production.

5. SOCIAL NATURE OF PRODUCTION BY MACHINERY

Production in the factory is planned. Division of labour is reflected as division of work amongst detail machines and the workers who operate and serve these machines. The co-operation amongst the machines as well as the workers is organised, i.e., planned. This planning is organised from one centre, that of the factory management.

The different industrial activities, carried on using machinery, reflect the division of labour in the society in distinction to the division of labour in the factory. The more this division of labour is developed, the more each enterprise becomes dependant on the other. Just as the activities of different detail machines and the workers in a factory are dependent on one another and has to be

organised, planned, so this division of labour in the society calls for organisation of productive activities of the society. The more developed the separate units of this division of labour is, the more developed the means of connecting them to each other, the means of transportation and communication, has to become. The technology of transportation and communication give us the means available to the society to organise the whole social production. Railways, steamships and telegraph are the means available to this society, and they are, in themselves, more than suitable to organise the whole social production.

Machine production in individual factories, connected to each other through railways and steamships and information about production and distribution being communicated and collated through telegraphy tell us that the social organisation of production was not a mere possibility but a real possibility. All that was needed for it technologically was present in this era.

This requirement of the organisation of productive activities of society which, in this era, is not satisfied at all finds its expression in economic crises. Crises balance, plan the social production through the destruction of productive forces, till the next crises.

6. CAPITALISM AND SOCIALISM

Social organisation of production and distribution of this era is that of competitive capitalism. Production is social. But the ownership of means of production is private. Society is divided into those who own the means of production, the capitalists, the bourgeois class and those who own only their labour power, the proletariat, the working class.

As private owners of the means of production capitalists were unable to organise the planning of the social production which was a clear requirement of the level of technology and organisation of production. This development was clearly requesting the social, common ownership of the means of production for only thus could the social production be organised putting an end to the economic crises which destroyed the productive forces of society.

Era comes to an end with the Paris Commune, the unsuccessful attempt of the working class- the only social grouping who can achieve social, common ownership of the means of production and therefore organise, plan, the social production- to assume political power as the only means of satisfying this requirement of technology and organisation of production.

7. ENGLAND

This mode of production has taken over the production of things produced by handicraft and manufacture giving rise to new products and new production processes which did not exist before.

An organised system of machines, to which motion was communicated by a transmitting mechanism from a central automaton, an automatic factory, within which production was planned was the most developed form of production by machinery as this developed during the era of the First Industrial Revolution. The country that gave us the most perfect examples of this mode of production in this era was England.

— III —

THE SECOND INDUSTRIAL REVOLUTION

—THE AGE OF ELECTRICITY—

The age of electricity, or the second industrial revolution begins in the last quarter of the 19th century in the U.S.A. with the separation of Research and Development as a branch of industry and ends with the August 1953 session of the Supreme Soviet of the U.S.S.R. when a new course back from Communism was charted for the U.S.S.R.

1. RESEARCH AND DEVELOPMENT

Towards the last quarter of the last century modern factories, where the layout of the machinery with the material handling devices to connect them to each other were planned before they were built came into being, and all that could be achieved in automation and continuity of production through the use of available technique of production was more or less achieved. Ingenuity of machine makers were exhausted in creating the motion in steam engines, transferring this to the shop floor, transforming this to run the working machines, controlling the motions of the working machines to automate them and making the process as continuous as possible using mechanical devices.

This factor and the very growth of production in huge factories necessitates and give rise to the separation of Research and Development as an independent branch of industry. From now on, the developments of sciences and their application in production, i.e., technology is taken on by large and ever growing number of men as a separate branch of industry.

Development of variety in science and technique, interaction of different branches of science and technique is the hall mark of this era. Old industries has grown bigger and developed, new industries relying on internal combustion engine, but particularly electrical and electronic industries came into being. Engineering industry as the industry which makes the developments of all these industries possible have itself utilised the results of all the industries to perfect itself and therefore all other industries. Transport and communication has gained new forms which never existed before; the car, the plane, the telephone, radio.

Coinciding with the separation of research and development we also come across the start of management of production turning into a separate branch of science.

2. SCIENTIFIC MANAGEMENT MOVEMENT

In Manufacture, before the Industrial revolution, it was the workmen who, with their manual implements, had to, either singly or in groups, carry on each particular detail process. If, on the one hand, the workmen became adapted to the process, on the other, the process was previously made suitable to the workman. Here, the process as a whole was examined subjectively, that is to say, with regard to the question of its execution by human

hands. This was a subjective principle of division of labour and was pushed to the background in production by machinery.

Scientific Management Movement brings this subjective principle back into use in two distinct spheres: a) The areas of production which were basically manual: most important of these is the assembly process, and b) what is called man-machine interface, manual tasks performed in relation to machine's work.

Each and every sense of men, each and every movement of men's limbs which were still needed in production activity was examined in the minutest of detail and reduced to the use of essential senses and movements. This is the famous Time and Motion Studies. Inevitably, in its development, science of management has not been able to restrict itself to the study of workmen's movements and studied all aspects of production. Hand tools, tools of machines, designs of machines, holding devices for the raw materials and products, the transfer mechanisms for these, design of the work-stations and machines, positioning of the work-stations and machines in relation to one another, the designs of the products themselves as well as the materials used to produce them etc., all coming under scrutiny. Movements of machines and workmen's limbs are reduced to the bare minimum necessary to do the job through the elimination of the unnecessary movements of workmen in doing the job and through the adaptations mentioned above which eliminate some of what were the necessary movements to do the job. Here the difference from manufacture shows itself. In Manufacture adaptation of the process to the workmen was unavoidable, here the main thing is precisely to eliminate the movements needed from the workmen through the use of different

adaptations and only after that, if there is still a need to use the workmen, to adapt the processes to him; but that to his objectively determined capabilities. Thus, subjectivity, the need to adapt the job to the workmen becomes objective. Workmen himself, the subject in the production process, becomes the object of study, of objective consideration as nothing more than an objective element in the process of production with a certain capacity to sense and to move.

The effects of above mentioned developments and the begging of the utilisation of electricity in industry have changed the whole structure of the factories.

Let us take a look at the elementary factors of production by machinery without following all the changes which occurred in this era, only showing their most important results .

3. PRIME MOVER AND TRANSMITTING MECHANISM

End of last century and the beginning of this century saw the production of electricity and its utilisation in lighting, and in line with the development of the electrical motors, in machinery. This reaches a stage that all the movements needed by the machines, be they mechanical, hydraulical or pneumatic, are provided by electrical motors.

Production of electricity itself become a separate branch of industry. Whatever the methods of its production, it is produced in huge quantities and transmitted to the point of use through transmission lines which were growing ever longer. From these transmission lines distribution networks, what are today called, sub-networks branched off. Connecting to this

network, every factory had its own special network of electricity which branched off to each machine. Here, we have a transmitting mechanism in relation to which the transmitting mechanisms of the factories dependant on steam engine pale into insignificance.

In the past, the steam engine provided the mechanical motion to each engine which was carried to the factory through a huge mechanical transmitting mechanism which branched off to each machine. Now, we have huge electrical power stations producing electricity and transmitting this to many factories through a giant transmission line and a distribution network; this network branches off to each factory and from this branch, further branches reach to each machine; every machine transforms this electricity into mechanical motion through its electrical motors, and the motion provided by these motors into the varied forms of motions it requires through its own transmitting mechanisms.

In the past, the tools were the organs of a working machine and the machines were the organs of the steam engine; each machine and its tools were dependent on the motion provided by the steam engine and the transmitting mechanism, which dependence giving rise to a technical oneness in the factory. Now, many factories are dependent on the power station that produces the electricity and its transmission line; this dependence gives rise to a technical oneness for many a factory dependant of the same power station. Many factories are organs of a power station and its transmission line. Also, the inter-connection of different transmission lines in regional networks begin in this era, pointing to an ever growing technical oneness based on all factories being dependant on not just a power station but the national network of transmission lines of all the power stations.

The revolution started by the electricity could not have been restricted to the lighting as an accessory of production and the electric motor as motive power for machines. Electric traction soon became possible through the railways. Communication developed through telephone, spreading especially thanks to electric relays automating the connection of users to each other. And radio, in line with developments of electronics, came into being, later on giving rise to television.

4. WORKING MACHINES

Even before the wide spread use of electricity and electrical motors in the industry has begun, automation of machines has been achieved. Further developments of this process has come across the problems of achieving perfect control of the processes using mechanical devices to control motions of machines.

Production of motive power needed by the machinery using electrical motors does not only get rid of the huge transmitting mechanism that was needed to transfer the motion produced by the steam engine to the shop floor but by its small size and its versatility makes different sorts of motions needed at different parts of the machine possible where it was impossible before due to the difficulties of mechanical transformation and transfer needed; and where these motions were possible only through complex mechanical constructions to transfer and transform motion, now much simpler constructions can be used. This, going hand in hand with the developments of devices used to transfer motion, such as gears and shafts, has lead to the provision of a capacity to produce and control almost perfectly the different modes of motions needed by machinery.

The effects of these were not restricted to a change in the mode of production and transfer of motion. They acted on the working machines themselves and in the tools used by the working machines and vice versa. Not only the automation, i.e.., the negation of the workmen in the process of transforming the raw material using the tools but also the continuity of production, i.e., the negation of workmen in feeding and transferring the raw material to and from the machines could be perfected thanks to the ease of production and control of different modes of motion made possible by electrical motors, and steps began to be taken in these directions.

CONTINUITY OF PRODUCTION AND THE WORKING MACHINES

Standardisation of different parts of a product and their assembly afterwards producing a standardised product, with interchangeable parts followed in the wake of Industrial Revolution. This requires the production of parts to the same standards time and time again and therefore taking of the control of the production process from the operator i.e., perfecting the automation of the machines that are to produce the parts. And yet, to the extent that every part has to be processed by a number of detail machines the loading of the parts to these machines by the human hand would inevitably bring in a variance in the parts produced or make it a time consuming process. This was tackled by invention of many a varied loading devices that takes the job of loading the machines from the operator and passes it to the loading and holding devices. And the developments in these automatically calls forth the invention of devices to transfer the parts between detail machines.

Thus, in the factory floor, where the parts are produced devices to load the detail machines, to hold the material as it is processed by the machine and to transfer the processed part to the machine next in line, began to be developed.

These developments did not have much to do with the working machine directly, but their effects did. Machines that were independent entities within the factory became part of not only the electrical giant which gave them motion but also, of the transfer line which connected them to each other mechanically-automatically and their structure had to be changed accordingly.

This, as in the case of a transfer machine begins the process of obliterating the differences in detail machines. In a transfer machine, although we do still have the detail machines around it, they have now become parts of the transfer machine so much so that their whole structure is changed to accommodate the new loading and transfer mechanisms. Therefore the distinction between the automation and continuity of production begins to disappear through mechanisation and automation of these devices for loading, holding, unloading of parts to the machines and their transfer between machines. Detail machines that work on part of a product is replaced by lines of machines that produce the product automatically and continuously.

5. CONTINUITY OF PRODUCTION AND THE ASSEMBLY LINE

During the first industrial revolution, the assembly of standard parts was carried on by hand labour. If the product was small, one workman would have available in his work-station all the parts necessary and assemble

them to produce the final product. If the product was big, or immobile, a group of workers would come together at a work-station and assemble the whole product.

During the second industrial revolution, assembly-line production has put an end to this mode of assembly. Now, workers were stationary- whose particular job/jobs, were determined in line with Time and Motion study- and the work and the parts were transferred to their work-station by a conveyor, forming the assembly line, work being done on each station in a specified order until the whole product is assembled.

Here, instead of the detail machine, we have detail worker, therefore the work is basically manual, using hand tools; even if the assembly line is a huge mechanical transfer mechanism and mechanical aids are used in different stations. Therefore, assembly line does not automate the production process at all. Assembly line is a transfer mechanism, a materials-handling mechanism and effects only the continuity of production. This, the development of continuity principle during the assembly of standard parts is the main contribution of assembly line production to the production process which had helped further develop the continuity of production on the shop floor, during the production of parts.

And yet, this development in conjunction with the above mentioned developments have led to the mechanisation and therefore automation of many an assembly processes perfection of which, had to wait for the utilisation of computers.

In the case of big and immobile products, assembly line production is impossible. Product changes as the parts are added onto it until it is finished. This factor creates problems in achieving continuity of production and in-spite of all the steps taken to achieve continuity of

production the nature of the products makes brakes in continuity unavoidable-just as in the case of certain mining operation where the nature of the subject matter is the cause of the breaks in continuity.

6. CONTINUITY OF PRODUCTION AND STORAGE

Movement of large volumes of raw materials and finished products could not but effect and direct the attentions to their storage. This began to be mechanised in interconnection with transportation to and from the factory and within the work going on in the factory. Materials handling during the production process begins to be connected to the storage of raw and finished products and to their transportation to and from the factory.

7. CONCENTRATION

Machine production leads to ever-growing large-scale production. This is the concentration of production in large enterprises. This process leads to two different but essentially the same developments.

SPECIALISATION AND CO-OPERATION OF FACTORIES AND COMBINES

As the scale of production grows, it necessitates the specialisation of factories on the production of one or more similar parts of a products and the co-operation of

the different factories producing different parts that make up the final product.

This immediately calls for direct transport and communication links between these different factories. And this itself leads to a direct transport and communication link with the point of sale where the product reach the consumer.

This means that the principle of unification of processes of different detail machines which exerted itself in the factory, this requirement for continuity of production is taken out of the factory and becomes a principle of unification of different detail factories, becomes a requirement of continuity of production amongst different factories.

Continuity of production must now be achieved amongst specialised factories. This requires integration of production with transport and communication and starts to use whatever technique is available in these spheres. Thus the distinction between the materials handling activities in the factory and transportation between factories begin to disappear. Thus the need to communicate(plan) between the work stations within the factory is taken out of the factory and the need to communicate(plan) the co-operative work between the factories is established. Thus the trade relations between different factories disappear, leading to negation of trade amongst these factories altogether in one huge distribution network of transportation and communication.

The networks of transportation and communication came into being earlier than the network of electricity. Transportation networks take the forms of railways connected to the sea-ports, and the networks of pipes. This is later on supplemented with a network of roads and highways for lorries and airports for planes. The

network of communications take the form of networks of telegraph and telephone lines, later on supplemented with networks of radio stations.

This co-operation of different large-scale enterprises can take the form of combination of different enterprises under one even larger enterprise, a combine, if the nature of processes involved is such that through this continuity of production can be achieved saving energy and transportation expenses- such as steel combines.

8. MONOPOLY CAPITALISM AND SOCIALISM

No longer are the detail machines the organs of an automaton of the factory but the factory itself is an organ of the power station, transforming the machines of the factory with their own organs in the form of their tools into smaller organs of the giant power station; no longer the need to make the production process continuous is restricted to the movement of materials within the factory, it is extended to the movement of materials between factories.

This requires co-ordination of activities amongst all these different aspects of production and distribution. In other words, once the huge size of productive activities takes the need to plan production our of the factory, the need to plan the whole social production begins to impose itself. For the first time the need to plan production and furthermore to plan distribution in line with production gains a direct technological form-direct transport and communication links between specialised factories, etc.. Many factories and the transportation of products amongst them and the sale of their products are controlled from one centre, is organised, planned from one centre. Planning has become unavoidable.

To the extent that this unavoidable planning takes shape within the confines of ever larger enterprises, and while retaining the private ownership of means of production, leads to monopolies and state-monopolies. Social organisation of production and distribution thus formed is that of monopoly capitalism. Production is even more socialised than the era before. But the ownership of means of production become even more narrowly private, it is concentrated in the hands of few monopolists. These people centrally “plan” the whole social production. Society is divided into those who own the means of production, the capitalists, the bourgeois class, with few financial oligarch at the top and those who own only their labour power, the proletariat, the working class.

Under these conditions, the form of national-international planning which has imposed itself takes the form of planning to make profit, nay more to make maximum profits. This form of planning, because it retains private ownership of means of production, even in its state-monopoly form, is not able to organise the social production as a whole and without economic crises. Crises become ever more destructive giving rise to two World Wars.

This era also give us a successful attempt by the working class of assuming political power in one country in order to socialise the means of production which have grown larger and even more socialised compared to the era before. On the basis of the social, common ownership of the means of production by the working class the whole social production is planned. As this reflects the requirements of the development of the technology and organisation of production perfectly, it is this country which gives us the best examples of production in this era. Here, all the classes that used to

own the means of production disappear, only the working people remain owning the means of production in common. This is the socialist organisation of society. I am of course talking of the Union of Soviet Socialist Republics.

9. THE UNION OF SOVIET SOCIALIST REPUBLICS

The first plan of organisation of production that the organisers of the new society produced was that of electrification of the whole country. Working people deserve nothing but the best, future of the humanity can be organised relying on nothing but the best and the best could only be had by the electrification of the whole country.

The age of electricity leaves us with examples of perfect automation and continuity of production achieved during the production process-and that not only in chemical industries which provide us with automation and continuity in its perfect form during the production process even in the first phase of Industrial revolution(English paper production), but in engineering industry as exemplified by the Soviet Piston Factory built in 1949 employing no workers in the production process.

Also in the Soviet Union, the need to take planning of production out of the factory and to extend it to the planning of total social production and to its distribution is applied in practice. This factor is taken to its limit only in the U.S.S.R. while in the capitalist world, this development is limited within the scope of monopolies; even its most developed form of state monopoly does not plan the whole production and distribution process- the highest form of this integration, in the capitalist world, is

achieved during the First and Second World Wars. In any case, planning cut off from the aim of satisfying the constantly rising material and cultural needs of the people and aiming for maximum profits for a tiny minority is bound to fail faced with relatively shrinking and still unpredictable market and competitors looking for an opportunity to destroy their competitors.

Indeed, not only because of the existence of the above mentioned factory which was the most developed technically in the world but because of the total integration of production and distribution processes achieved in this country that we have to refer to their experience to see what was achievable by the end of the age of electricity.

Just like the Americans and the English, the Soviets too has built their one off computers of valves during and immediately after the II. World War. They have began building their computers made up of transistors in 1954, in a factory specifically built for the purpose. How were things just before this height of achievement?

Research and Development and Scientific Management Movement have developed to such an extent that the industrially least developed European power that was Russia, became the Soviet Union that introduced into production the best technique and organisation of production processes which did not even exist in the capitalist world; and this not through the efforts of only the technical and scientific intelligentsia but also through the active involvement of all who took part in production, i.e., the workers who were all participating in R&D and SMM., through the socialist emulation movement, thus being able to develop technique ever faster and putting them to use for production ever faster.

They have formed huge networks of power stations, inter-connecting almost all power stations to one another. Thus, centralised electrification of the country inter-connected the production units of the whole country technically; specialisation of enterprises enabled standardisation and mass production in separate enterprises; co-operation of enterprises that produce complete co-operation of enterprises that produce complementary products complemented this; wherever suitable, combines were developed; all production units were inter-connected to one another and to the shops for the individual customer through a nation-wide transport and communication system; all of which interconnections being planned from one centre; thus being able to eliminate trade amongst enterprises; thus being able to make full use of locating production close to its raw material and/or consumer base eliminating unnecessary transportation.

This economy which, in 1917, was very backward, give us, in 1954. the utilisation of the best techniques of production in the world including the examples of full automation in engineering industry and to top it all a computer factory producing transistor based computers. The import of the latter factor will become obvious to the reader as we examine the age of computers. This country gave us one continuous curve of unbroken economic and technical development; this country gave us full employment and continuously increasing living standards with continuous reduction of prices etc., etc.,.

This country saved humanity from Fascist barbarism. This country prohibited not only the making of war but the propagation of war as a crime against humanity.

The main reason as to why they could achieve all that was the simple fact that they were able to execute their

economic development in line with the demands of the technique of production. The need to inter-connect productive activities i.e., the need to plan production etc., was obvious in the age of electricity. You want to boil water you have to heat your water to 100 degrees Celsius. You have to do what the laws of nature demand that you do. You want to achieve what the Soviets achieved between 1917 and 1954, you have to do what they have done: learn the laws of economic development and do what they demand of you.

The example of the piston factory was completed in 1949 with ingots being manually fed, by 1952 this process was automated too. Piston factory was chosen as a most difficult process to automate with the aim of utilising the experience thus gained to automate all production processes. This aim, with the coming on line of the computer factory in 1954 was surely in reach of this country. As to why we do not have this result and instead we have a total break down of production in that country we shall have to remind the reader that to move forward one needs to learn and obey the laws of economic development. Whoever acts contrary to these laws is bound to make a mess of things. August 1953 Session of the Supreme Soviet of the U.S.S.R. has began the process of disregarding the laws of economic development in this country. The results of this mode of activity is clear for all to see.

This new, capitalist Russia, which the capitalist world did all it could to achieve, can not save humanity from the Fascist barbarians, but it can certainly lead the humanity into barbarism of criminals to which it has itself been led.
Here, we have to point to a misconception which is wide spread amongst the production engineers. They think, that what they call “operations research” or “systems

engineering” is a spin-off from planning of huge military operations in Second World War. This is a total misconception. It disregards the Soviet Science of Planning which was developed to centrally plan the ever growing Soviet economy. Material and financial balances achieved for the whole economy by the planning organisations reaching down to the planning of activities for single projects, be they receipt of goods needed, be they construction activities using these goods give us “operations research” dealing with bigger “systems” than these production engineers have ever imagined. They are of course correct in asserting that in the computer the manager who plans and controls large scale, inter-connected systems finds a perfect tool. A tool, which especially with its capacity to collect data in real time, would have been a more than perfect tool for the Soviet Central Planning Organisation and its local branches reaching right down to the factories.

Let us now take a look at the age of computers to see what the Soviets could have achieved had they carried on as before.

— IV —

THE THIRD INDUSTRIAL REVOLUTION

—THE AGE OF COMPUTERS—

Although the transistor was invented in the U.S.A., the age of computers as a revolution in production technology, starts in the U.S.S.R. in 1950's, for it was this country which had the most developed technology of production in her factories as the computers come into use to control production processes and was the first country that openly spoke of their revolutionary role in production and planned to utilise them to automate all productive activities. It is as a result of the failure of those who diverted the course of development of the U. S. S. R. that we have the present anomaly whereby the U.S.A. is the country where the computer industry is the most developed.

Research and Development, Scientific Management Movement and Planning ("systems engineering", "operations research") leads to two diametrically opposed movements: towards the study and application of ever more minute variables through division and towards the study and application of ever bigger variables through integration. The former movement leads to the ability to control the electron and thus to the computers; and the latter movement find its perfect technical tool in the computer and leads to the ability to control the whole social production and distribution through integration of computers. The former movement eliminates the individual workmen as the operator turning machines into slaves of men, and the latter movement eliminates

government of men by men ending slavery of men to men.

1. COMPUTERS

Computers were human before they were devices. People who compute were called computers. The most simple forms of computers have begun life as devices that compute. Their origin can be traced to the ancient abacus, through Napier's bones and Pascal's and Leibnitz's mechanical calculators followed on by Babbage's Differential Engine.

But we are not interested in computers that can only compute. These do not start a revolution in production, they are not the 'brain' that can sense and control the production and related processes through the use of many a varied peripheral devices. We are interested in computers made up of transistors, leading to the ones made up of integrated circuits of transistors, the micro-chips. These are the true 'brains' and start the revolution in production processes. Even the electronic valve computers which were quickly overcome technically due to the invention of transistors are not suitable as a starting base for this revolution.

Just as a lever is not a machine, nor is a mechanical calculator-computer is a true computer. Just as one can find different simple mechanical powers in the machine and that does not make the simple mechanical powers machines, so it is with computers. Their ability to compute is but one of their ability and as long as they are restricted to this as mechanical devices or as a complex of electronic valves, they are but a means to calculate, to solve mathematical problems. Only in their form of a complex of transistors/micro-chips, thus being able to act

as universal means of control do they effect a revolution in production.

We are interested in computers as complexes of micro-chips, and unless otherwise specified we mean by computers these devices made up of micro-chips. Indeed, it is the transistor/micro-chip that we have in mind when we are talking of the computer revolution. They are the true revolutionaries giving rise to revolution in all other spheres.

On the technology and history of computers there are many books available which the reader can utilise. What we basically have, in its micro-chip form, is a silicon wafer which is etched into integrated circuits of transistors. This is the “brain” as a processor and memory. It has to be fed by digital information. If the source of information, say a sensor, does not produce its information in digital form, it has to be transformed into a digital form before it is fed into the micro chip. Micro-chip processes the information in line with its program. The result must be sent to the device that is controlled by the “brain”. If the receiving device can not utilise digital information, it has to be transformed into the form it needs it. Micro-chip without its peripheral devices is like a brain without any sense organs, thus it can not receive information from outside and thus no orders can be passed on to an organ to be controlled. Input of information, processing of this information and output of a new information is the basic process. This process can be used to control almost all processes of material production and distribution including the collection, dissemination and processing of all the information produced through this and any other human activity.

We would like to bring to the reader’s attention that, just as embryology, the working of the computer too is

the proof of development from the simple to the complex, from the lower to the higher, the movement for which is provided by the movement through opposites. In the computer the whole of its operations is based on whether the electron is allowed to pass through a transistor etched on the silicon chip or not. 1 or 0. Yes or No. All the complex operations performed by the computer is based on this simplest of all opposites to be found in universe. Most complex of human activities are performed thanks to electrons being able to pass or not.

Can you help laughing knowing that many an article and book against Dialectics have been written on the computer!

Computers as complexes of transistors begin and computers as complexes of micro-chips consummate the revolution in production but computers in their last form is not restricted in their revolutionary effects on production alone. More so than electricity, they have a revolutionary effect on all aspects of social life. Computers are indeed the most universal devices the world has ever seen. They are all pervasive. They enter into every aspects of our social life. That is understandable for they provide us with a universal means of control.

When we are studying the effects of the computers on production, it is best to start with the revolution they effect on communications as this forms the centre around which all its effects come to life. Indeed, without basic communications even the most simple process could not be controlled by the computer as we have demonstrated above.

2. COMMUNICATIONS AND THE COMPUTER

The micro-chip, the brain of the computer can not exist by itself. It is useless without means of communication with the outside world. It must receive and send information to the outside world. Only thus is it a means of control, a universal means of control.

As such, it can communicate with a machine and control its actions. As such it can communicate with a sensory device of most simple kind using a copper wire or one as complex as a satellite collating different sorts of information using its different sensory devises and transmitting them through the ether. As such, it can communicate with other computers sharing its collated data or its processing power. This factor leads to the formation of a communications network, a network which is already world wide. It is at the moment based on the telephone lines which already exist and the satellites, the numbers of which are continuously increasing. The now famous super highway is the replacement of the copper wires of telephone lines using electrons to transmit the digital information produced by different devices and the computers with lines of optical wire using light to transmit this information. The super highway and satellites with their earth stations are the future of the world wide communication network which shall replace the present world wide network of communications i.e., copper telephone lines and satellites.

From this world wide network branches off smaller networks. One that covers a country, a region, a town, a factory, a machine, a school, a hospital, a home, the individual on the move with his laptop computer. All are thus interconnected to the world wide network and thus to each other. All thus can obtain all the information

collated. All thus can communicate with each other on any subject. Especially now that this network and the computers are able to communicate written and spoken word and picture.

The society thus formed has come to be called a “Global Village”, “the Information Society” etc. This society, we shall call something else later on.

Let us see what effects the computers had on the activities we have mentioned before

3. RESEARCH AND DEVELOPMENT

In the Computer, Research and Development has gained a means for its own development that is unmatched by anything it had available before. Indeed, it was as a means of helping R&D that the first electronic valve computers were made. R&D made the computers which in turn made R&D what it is now. An activity that could solve almost all the nature’s secrets and make its forces available for human use. Here I leave aside the well known factor of militarism. Unfortunately, since in our social life we have not yet cut ourselves off from the animal kingdom completely, technological developments in military sphere always leads the way. It will come to pass.

But what does computers signify for R&D. Do they signify a powerful tool in the hands of experts in R&D work, the few number of men of science and technology. That is how they are used now. But they signify something totally different. **They signify that every individual on earth can become a member of this elite community.**

To start with, all can have a British Library and the best minds in different fields as lecturers through ‘the

information super-highways'. It is indeed a most powerful means of education. All can communicate with one another to exchange information and co-operate to solve scientific-technical problems. All can participate in R&D with increasing expertise. Thus, the development of scientific-technical knowledge can reach unheard of speeds.

We have examples of this development in existence. Internet was developed for the specific purpose of establishing such a communication line amongst R&D workers in military field in the U.S.A. This is now a world wide phenomenon. Tele-conferencing etc. is also well known examples of this development. Remote control of machinery in R&D laboratories by the people who are connected to them is developing. Space ships and satellites are already so controlled. All this is based on the communication network in collaboration with the computers that we have mentioned above.

4. SCIENTIFIC MANAGEMENT MOVEMENT

More than anywhere else, it is here that computers have been provided by the necessary information for them to be able to act as the controllers of productive processes. If it was not for the scientific management movement with its work in determining different and minutest variables and their interaction during the production processes as well as its transformation of working men into an object of scientific study, computer control of production processes would have been impossible. This is most obvious in robotics which is most readily traceable to the study of movements of men's limbs and to the study of the movements needed to carry out the processes.

Here, on the factory floor, the SMM turns into ever more detailed study of production processes with an aim of not only automating them but also of making them continuous, thus eliminating the workmen from the production processes altogether. What enables them to do so is the computer as we shall detail later on.

We have many an example of this development. There are many a manless factory in operation. Manless, therefore, to the extent that we are interested in production, managerless!

We have already seen that management of production has to be taken out of the factory. It has to consider many an interconnected productive units and distribution, transportation etc. Production has to be managed as a wider, inter-connected whole of social activities. It is this that the bourgeois production engineer calls “operations research”, “systems engineering” or the Soviets used to call Planning. And this need finds a perfect instrument in the computers. Management can follow everything which is produced and consumed(sold), can organise production perfectly, can simulate what this or that change will result in, etc.

The world is full of examples of this. Every corporation, and these are mainly international, utilises their corporate computer to keep an eye on all their operations: production, transportation, sale, finance, manpower. The fact that they can not control their operations perfectly is neither here nor there. Go back in history, provide these facilities to Soviets and you shall see that we would have had an example of perfect control.

5. PRIME MOVER AND TRANSMITTING MECHANISM

In production and distribution of electricity as well as in its transformation into motion by the electrical motors there have been continual change. Much more varied are the means of producing and distributing electricity, and the electrical motors have more or less been perfected permitting us to produce motion where and however we want it. More of course can be achieved through the use of super conductors etc.. In the mean time the whole production, distribution and expenditure of electricity is or can be computer controlled. These are some of the easiest processes to control using computers for just as chemical industry, once the facilities are set up we are dealing with processes which by nature has to be continuous and their products are by nature impossible for man to handle.

One of the most important developments in this field is the establishment of national-international networks. We must repeat our words of the last era taking this into consideration:

Production of electricity itself has become a separate branch of industry. Whatever the methods of its production, it is produced in huge quantities and the separate units of production are connected into a whole through electrical networks which are not only nation-wide, but can be and sometime is, international. Every factory has its own special network of electricity which branches off to each machine, and is connected to the main network. Here, we have a transmitting mechanism in relation to which the transmitting mechanisms of the factories dependant on individual power stations, let alone the steam engine, pale into insignificance.

In the past, the individual power station provided electricity to many factories through its transmission line. Now, we have a huge electrical power industry producing electricity and transmitting this to all factories through a giant network which connects all power sources to each other; this network branches off to each factory and from this branch, further branches reach to each machine; every machine transforms this electricity into mechanical motion through its electrical motors, and the motion provided by these motors into the varied forms of motions it requires through its own transmitting mechanism.

In the past, many factories were dependent on the power station that produced the electricity and its transmission line; this dependence giving rise to a technical oneness for many factories dependant of the same power station. Many factories were organs of a power station and its transmission line. Now, each factory is dependent on the power industry that produces the electricity and the national-international electrical network; this dependence gives rise to a technical oneness in the whole country, nay more internationally. Every factory is an organ of the power generating industry and the national-international electrical network.
More apparent and radical are the changes electricity in combination with electronics in general and the computers in particular has initiated in communication. “Global Village” is not a concept for science fiction, but for science and technology.

The revolution effected by electricity in Transport has been further developed. We can now electrify the railways by simply connecting them to the electrical networks and raising the voltage, for the need to have electricity at a different frequency to run the trains has been overcome. Furthermore, all the activities related to

this mode of transport can be computer controlled, i.e., automated to the last detail. One other mode of transportation which is most readily electrified and computer controlled are the networks of pipelines. The moment we connect all the productive and distributive units to each other utilising these modes of transportation we automate transportation and to the extent that the loading and unloading is also automated we achieve continuity of production outside the factory, i.e., nationally-internationally.

We have examples of computer controlled electrical railways, be they slow moving underground railways, be they very fast over-ground railways, be they dedicated lines to carry certain goods, particularly coal. We also have examples of huge computer controlled networks of pipelines for transportation of oil and gas which criss-cross national boundaries. The national-international network of the power industry itself is the most wide spread example of automated, computer controlled means of transportation as it does transport electricity, the product of power industry and should serve as an example for the electrified railways and pipelines.

Not only the factories are reliant on the power industry and its network. The transportation lines, although not wide spread, rely on this network for their motive power too. Furthermore, computers rely on electricity as well and are therefore connected to this network. Yet, computers are the communication and control devices used in production, distribution i.e., transportation. All our productive and distributive activities are dependent on the power industry and its national-international network. This is the height of what is called the socialisation of production. **National-International socialisation, social nature of production and**

distribution, gains an open, apparent, for technological form, through the national-international electrical network.

6. WORKING MACHINES

To the extent that the working machine remains in its detail machine form, we see it completely transformed. It has well developed sense organs and a well developed brain to process the information received through these organs. In other words sensors of all sorts measure all sorts of qualities and quantities as required by the production process and send these information to the computer which is already programmed to direct the machines' and raw materials' movement to carry out the process and can adapt these movement in line with the information received from these sensors. This same detail machine is a part of a machine cell which contains material handling equipment to load and to unload the detail machine and to carry the work piece to the machine next in line. This whole machine cell is controlled by the same computer which co-ordinates and control the activities of different devices in the machine cell. Computers of the machine cells in each section of the factory are connected to other and more powerful computers which are in turn connected to an even more powerful computer to run the whole factory.

Furthermore as the corporations own more than one factory and are involved in other operations such as sales, finances, etc., there is an even more powerful computer at the corporate head quarters which is networked to all the factories etc., of the corporation and is used to control all the operations of the corporation. At this stage or at the stage of the factory controlling

computer the designers design the product and the instructions concerning the design is passed onto the computers controlling the machine cells and the production begins. Such production cells are part of what is called **Flexible Manufacturing Systems**. The idea is based on there being not enough of a demand for the product to justify building a **Flow Line**.

Even at the end of the era of electricity, we see the achievement of automatic ‘flow lines’ as was the case with the Soviet piston factory. Flow lines are a special combination of detail machines each of which do a part of the work. Here the detail machines are completely changed in order to make them a consistent part of the flow line, an integral line of detail machines and material handling equipment. Raw material enter at the start of the line and finished product leave at the end of the line without any involvement of men in the process.

The Soviet flow line was controlled by electromechanical and electronic devices, but not computers. What is now new is that every operation in the flow line and the flow line itself is controlled by the computers. For the flow line technique to be viable, two things are necessary. Standardisation and based on this the huge amounts to be produced(mass production). Once every product is truly standardised, huge amounts of products becomes a necessity for almost all products range and thus all production can be performed through flow lines. As is usually the case, the end product of a flow line is a part of yet another product. The flow line itself is but a detail flow line, which has to pass on its products to yet another for further processing and/or assembly. The co-operation of detail machines becomes the co-operation of flow lines. This necessitates that the computers controlling the flow lines co-operate with one

another, function in tandem. In other words they have to plan the co-operation of these flow lines.

Once the products are truly standardised and the huge amounts become a necessity, FMS's would be restricted to the R&D laboratories; to the making of prototypes and to the relatively few areas of production which require specialised products in small numbers, etc..

As things stand, we have plenty of examples of fully automated, i.e., computer controlled dedicated flow lines as well as combinations of flow lines, and fully automated, i.e., computer controlled FMS's.

CONTINUITY OF PRODUCTION AND THE WORKING MACHINES

FMS is used to avoid flow lines and therefore the continuity of production is not so perfect as it is with the flow lines. Yet it could be perfected through the use of different equipment, such as robots and standard sized pallets to hold the parts etc. This of course would amount to a waste of potential unless it is used for very specialised production of small numbers of products, for, a dedicated flow line-dedicated to a certain product, would present the better solution for production of large numbers of products.

With the flow lines, we have perfect continuity of production. Sometimes a number of flow lines co-operate under one roof passing their final product into yet another flow line without any break in continuity.

There is nothing more to be said about continuity of production for all can be said had to be said when we were looking into the working machine. With the detail working machine becoming an integral part of a flow line,

which itself can be a detail flow line, or part of an FMS, continuity of production is assumed.

Planning in the factory assumes an obvious, for technological form, through the network of computers in the factory.

7. CONTINUITY OF PRODUCTION AND THE ASSEMBLY LINE

The basic unit of this activity, the material handling mechanism has seen many a changes and developments. Conveyors, perfected in their many different forms, are not the only means of materials handling available now although they still constitute the main forms of this activity. Part feeding devices proliferated and perfected, leading, in most cases, to mechanisation(automation) of assembly; new mechanical aids developed to help manual assembly; new mechanical devices invented that replace manual assembly; designs of products have been changed to reduce the amount of assembly work needed; new materials invented and utilised to eliminate the need to assemble the different parts; new methods of joining parts invented and utilised to eliminate the need to assemble parts manually etc.

One of the most important development has been the increasing use of sub-assemblies. Many a sub-assembly is produced automatically. Many a small product containing a few number of sub assemblies can be assembled automatically. When it comes to a large or small number of sub-assemblies being assembled with some operations needing that human touch, the intricacy of movement only humans are capable of, requiring the use of human sense organs and hands, even if they are

using mechanical devices, the human labour becomes unavoidable. And yet, as the automatic production of sub-assemblies and automation of many an intricate operations prove, that this need is something the assembly operations can overcome. If it can be done to assemble constructive machines(machine tools) as has been done, it can be achieved for all other assembly operations too. The way forward has been opened wide thanks to the invention of computers and continuous developments of the sensors and mechanical devices which can be manipulated by the computers in conjunction with the information provided by the sensors. The other methods such as change of design, materials and processes utilised, is bound to carry on playing their role in eliminating the need for human labour from the assembly processes. But, it will be computers that will permit us to see the changes needed in assembly operations to automate them, devise the means to achieve them and give us the means to control these operations thus settling the issue. The importance of robots-these versatile computer controlled devices-, in assembly operations is a good example of this fact.

As things stand, we have huge number of assembly operations assembling small parts automatically, i.e., under computer control and a small number of assembly operations assembling big parts automatically, i.e., under computer control.

This leaves the assembly of big and immobile products. Production of parts, including sub-assembled parts, away from the sight of the product thus reducing the amount of work that needs to be performed on the site has been the line taken in this area together with the improvements of means of handling and assembling these parts. This line of development will continue and

the amount of assembly that need to be performed using manual labour will continue to shrink. Negation of the need for manual labour in this area, which includes capital projects, can not be asserted as things stand now, but what can be safely asserted is that the amount of manual labour needed shall continually decrease.

8. CONTINUITY OF PRODUCTION AND STORAGE

Continuity of production on the shop floor which has been perfected has now been extended to the storage of the raw materials and the finished products. Once the raw material has been delivered to the factory it can be stored and transferred to the shop floor for processing without the interference of human labour. On the same line, once the raw material has been processed on the shop floor it can be transferred to store room and stored there again without the interference of human labour. Not only are these activities controlled by the computer but also the information as to what and how much is in the store is also known to the computer through the use of identification methods available to the system. **This signify the extension and achievement of continuity of production all through the factory.** Once this is achieved, there is no further room for development except the perfection of processes and products and inventing new processes and products. These days, when people talk of an automatic factory, this is what they mean. This is obviously different than the automatic factory people used to talk about in the hay days of the First Industrial Revolution. Here, not only the production processes, the working of the raw materials is automated, the transition from one stage of processing to the next is

made continuous, eliminating men from this line of work too. Not only that, continuity of operations is extended to the storage of raw materials in the store rooms and their delivery to the shop floor and the delivery of the finished product to the store rooms and their storage there.

As things stand, we have a number of such factories.

9. NATIONAL-INTERNATIONAL

CONTINUITY OF PRODUCTION AND DISTRIBUTION

Next in line in the development of continuity of production is to receive the raw material needed and to transfer the finished product to another factory or to a shop-supermarket automatically. Load them and unload them under computer control and move them between factories and shops using computer controlled means of transportation. In other words, **to achieve continuity of production not just in single factories but amongst the co-operating factories and between factories and points of distribution to the individual consumer, to the shops-supermarkets.**

Requirements for this developments are to load and unload the products automatically, to transport the products between the points of production or between the point of production and distribution automatically and therefore to control all these processes of loading, unloading and transportation using computers which are interconnected to each other.

There are examples of this extension of continuity of production and distribution particularly in power and chemical industries. The best example is the power industry where the product(electricity) of many different

power stations are transported to the points of use via the national-international network under the control of a network of computers. The next best examples are to be found in the petro-chemical industries where the raw material(crude oil) which is a product of different oil wells, is transported to the refinery for processing into different products one of which may be directly transferred to a power station to be used as fuel to produce electricity or to a chemical plant for further processing etc. Here, it is the computer controlled network of pipes which are utilised. Other examples, which are not a perfect example of the continuity we have mentioned are the dedicated rail lines, which in the case of transferring coal to power stations approach the perfection. Nevertheless we have examples of the application of this principle of extension of the continuity of production and distribution to national-international production-distribution processes.

Here we see that even the long distance transportation in production and distribution is nothing but a materials handling operation and all the new books of production engineering treats it as such, which reflects the need to achieve continuity of production and distribution processes outside the factory. Ford is said to have made plans of such a continuous production starting from the extraction of ores etc., to the sale of cars to the customer.

What does this involve, other than loading, unloading and transporting products is the information about these products and their movement-including their consumption. This information can now be had on real time, continuously. Anyone who has been to a supermarket-not to mention the National Lottery outlets-has taken part in this information gathering process. On the basis of this information, which can be gathered

thanks to the developments in the communication technologies at the centre of which stands the computer, **all these operations are Planned, again using the computers.**

10. CONCENTRATION

In this era the concentration of production has been developing all the time. Production has been concentrated in ever-larger enterprises.

The fact that with the advent of computers the number of workers in these ever-larger enterprises has began to reduce in relation to the amount of products produced is nothing new, for such has always been the result of increase in productivity if it is the result of technological development.

The fact that when the computerisation of production is carried to its logical and technologically possible limits the worker as we know it disappears from production leaving only a small number of highly qualified technicians etc. to produce the products, this is something new and we shall look into this.

Yet, this does not negate the fact that production is concentrated in ever-larger enterprises.

Specialisation and co-operation of the specialised factories, as well as the combines have now assumed a national-international technological unity. They are connected to the same electrical network. The fact that the planning of production in the productive unit has been taken out of the factory and became a planning of production on a national-international scale has also assumed a technological form through the computers. For, now, it is not only the factory computer through which production at the factory is clearly planned and

thus co-ordinated, but through the corporate computer which is directly connected to all the factories of the corporation as well as to their transportation, sale and financial operations that the whole social production and distribution activities of the corporation is planned nationally and as is the case for most of the corporations, internationally.

Planning of national-international social production assumes an obvious, for technological form, through the networks of computers.

Therefore:

11. MONOPOLY CAPITALISM AND COMMUNISM.

The development of concentration is still in the form of monopolies in the Capitalist countries. They have simply grown bigger. Their international activities have become ever more wide spread. And the x U.S.S.R. countries joined the picture. This is the one result we have at the moment. Here the social organisation remains the same as before. Monopoly capitalism.

Meanwhile, everything we have said is pointing to something totally different. Let us take a look at what can be if we act in line with the demands of the available technique of production. In other words, let us take a look at how things ought to be.

COMMUNISM.

The power source for the modern production process is electricity. It is produced in huge quantities in huge power plants of all sorts and these are integrated into a whole as a national- international network.

This, by itself provide a national-international interconnection of the productive processes, and thus, by itself, points to the need for the national-international planning of all the inter-connected productive processes. Computers takes this developments to its extreme.

First of all, in the individual factory the whole process of storage of the raw material, the design of the product, the production and the storage of the finished product becomes a continuous, automated process. Only a few labourers, technically expert at that, need to interfere in the whole process.

This is not just a possibility. This is a reality which already exists in a number of factories.

The product of a specialised workshop may be a raw material for another, thus necessitating the transportation of the product from one workshop to the next in line to process it. This process continues till the final product is delivered either to a new workshop where it acts as a means of production or to the final individual consumer where it acts as a means of consumption by the individual. Just as computers provides a means for us to make the production process a continuous and automated one in each workshop, so now, it provides a means for us to make the whole national-international production process a continuous, automated process by enabling the connection of each workshop to its relevant co-operating workshop by means of railways, pipes etc. and automating the loading, transportation and unloading of all the products in this transportation network.

This is not just a possibility. This is a reality which already exists in a number of enterprises.

The ultimate aim of production has to be the satisfaction of human needs. Production cut off from this aim is bound to disappear from the face of the earth.

Distribution of products amongst the productive workshops and their productive consumption at these workshops must ultimately lead to the products reaching the individual consumer to be consumed by them to satisfy their constantly rising material and cultural needs. And this can now be achieved by extending the above mentioned transportation system from the points of productive workshops to the points of individual consumption- either directly to the individual consumer or to the supermarkets etc..

All these activities which rely on the continuity and automation of production, transportation and distribution; transforming the whole process into a directly inter-connected process could not have been possible without the computers and the revolution they have began in the reception and processing of information and thus in the communication technology. It is thus that, every product designed and produced can be known, transferred from one operation to the next, from one workshop to the next, from workshops to the individual consumer. This interconnection, this transfer of information, by being controlled from one centre can be utilised to balance the whole inter-connected system, producing a perfectly balanced plan of the national-international productive, distributive system. It is thus that the planning of national-international production is perfected.

Computers, thanks to their capacity to process information and communicate these through optic cables and satellites are, with electricity, the most universal invention of all time and are usable in all aspects of life.

Not only do they make the time for all to study available by automation of national-international production-distribution process, but they also provide the means for education. All can have a British Library and

the best minds in different fields as lecturers through ‘the information super-highways’. All can communicate with one another to exchange information and co-operate to solve scientific-technical problems, as well as control the production and consumption of each and everything. Thus, the speed of development of scientific-technical knowledge reach the “speed of light”. Thus, the cultural development of each individual is assured and time for sportive activity to develop man in physically perfect form and time for social activity to develop man in spiritually perfect form and the means for these are made available.

This is a new form of society based on the slavery of machines to men made possible by the computers. This is a new form of society based on communication of all with all made possible by the computers. This is a society where the wealth can be produced in abundance. This is a new form of society based on the co-operation of all. It is impossible without this co-operation. Division of society into classes comes to an end.

Call it what you will, but it is called a communist society, a society of co-operating individuals.

12. WHICH COUNTRY?

Had the U.S.S.R. not changed its course it would have achieved the above defined society sometime after 1954, the year the first computer factory in the U.S.S.R. was built. The history is full of zigzags. The country that could have given us this has been brought to its knees.

The honour of building the above society can belong to any country.

Honour to them who built it first.

This society is what we can have. Every bit of knowledge, every bit of technology that we need to built

it, is already available. We should have it. Indeed, we must have it, it is imperative that we have it, for otherwise we will end up in barbarism.

So, why do we not have it?

To find out, let us first of all take a look at the factors we have studied above and some others, to see how they are being handled by the present monopoly capitalist formation of our society and therefore by its rulers, the monopoly capitalists.

— V —

UNREASONABLE

According to Hegel something may exist but if it is not reasonable, it is not real and therefore looses its right to exist.

Let us see how reasonable the things are in relation to the utilisation of the presently available technology of production.

1. POWER INDUSTRY AND NETWORK OF ELECTRICITY.

There are many and varied means of producing electricity. The logic of technology requires that we look into all means of producing electricity and use them in line with the availability of resources, and our ability to automate these production processes, insuring that they do not damage us, i.e., the environment, and connect them all to a national-international network, computer controlling the whole system. All the technology to organise this system is already available.

Can it be said that it is reasonable for a country practically sitting on coal to import coal from the other side of the world, wasting valuable human resources of transportation?.

Can it be said that it is reasonable that some of the world's most technically developed mines are closed down, and coal is imported from the other side of the world which not only need to be transported all that long distance, but also, in the case of Colombian coal, is

mined under medieval technical conditions, including child labour.

It is utterly unreasonable not only because Colombian children are being killed in mining that coal, not only because British miners and their families are being forced into poverty but because it is an obvious waste of human resources and particularly the waste of very results of human endeavour, our technological products which should be utilised to lighten our labour. Here, it is damped and replaced by child labour with a shovel at hand.

Production of electricity in huge quantities and its distribution through the national-international network was a progressive development preparing the material conditions for the higher form of society. This was in line with the technological developments which required interconnection of all productive and distributive activities. Yet, the UK has given us an example of a movement which is in total opposition to the requirements of technological development. Breaking up of the state monopoly of production and distribution of electricity.

This break up of the state monopoly into several regional companies is first of all a very good example of the power of computers available to us. For, as a result of this break up they have created such complicated trade relations that, without the computers they simply could not have handled it. There are many companies buying from and selling to each other using the very same national-international network. All these processes do not produce a single Watt of electricity and yet consume a lot of electricity and time and effort of many professional people as well as many computers.

All these efforts and materials could have been used to automate the production of electricity further and to get rid of any harmful environmental effects of producing

electricity. This is a step in total opposition to the requirement of the technology of producing and distributing electricity. It certainly adds nothing to the productivity of the industry but it reduces it for a lot of work which is not needed if things are done in line with the demands of technology becomes a necessity.

Can it be said that it is reasonable to close down modern mining facilities and import coal produced by children using primitive technology over the oceans? Can it be said that it is reasonable to break down an integrated organisation of producing and distributing electricity giving rise to all sources of totally unnecessary trade relations instead of further developing the technology of producing electricity.

I do not think it can. We can certainly say that the present mode of producing and distributing electricity is not reasonable at all.

Especially Chernobyls.

2. WORKING MACHINES-FACTORIES

Standardisation lays at the root of what is called the mass production. Therefore there is standardisation. It exist. It exists in two forms. First of all certain standards are set, say of treading of screws as to how deep etc., they have to be and also for the strength of the screws that will function under certain conditions. Such standards are more or less universal. There occurs big battles here from time to time, such as it has happened with the video players. This can either lead to a number of different standards, for example as it exist between Apple and PC makers, or to one standard as it happened with VHF in video players. Than comes the second form of standardisation. Every producer produce their own

products in line with these standards. You have a standard screw missing somewhere in your video machine? See if you can buy it from, say a shop that sells screws. You can not. You have to go to the producer. Anyone who tried to repair their car knows they have to go to the producer for a part that could have been standard for all cars. Indeed, why could not all cars be made to a standard? The best engines available used for all cars, best suspensions, breaks, safety futures etc. all the same in all the cars. This is the true standardisation and if this is achieved we immediately have a jump in productivity for the very size of production requires mega mass production. Which means all the parts can be produced in fully automated flow lines and all the parts can be assembled in fully automated assembly lines.

Productivity they say, productivity must rise. Well, here is a way to raise productivity. You want to raise productivity, truly standardise all parts and products and produce in automated factories in huge quantities.

But, what about variety?

Production engineering books usually refer to the distinction of FMS's and Flow Lines on the basis of the need for variety in products and because of this the comparatively small number of products produced. FMS's being more versatile are able to handle changed forms of products while Flow Lines, once set up go on producing the same product continuously. Therefore, producers are preferring FMS's which although can be fully automated still is not so productive as a flow line for they require comparatively more attention and work comparatively slower.

If products were truly standardised the small amounts needed would become big and the variety in products would be produced by the variety of flow lines in

operation. You want variety based on the best our technological know-how can provide, truly standardise products and produce them in variety on the flow lines.

On this basis the FMS's would be restricted to the R&D laboratories; to the making of prototypes and to the very few areas of production which require specialised products in small numbers and to the few areas of production where a flow line can not be introduced due to the nature of production. In these areas, they can most certainly be utilised to the full.

These R&D laboratories could be connected to every individual through the computer network and used by them all to develop technology of production.

So, why do we not have this productivity and variety, after all they love productivity and variety. They are the defenders of these. They are even selling state monopolies for they lack productivity and variety they say.

Well than Mr. and Mrs. productivity and variety lovers: here is Rose, here jump. Put the automated flow lines into motion. Utilise the FMS's and Flow lines in accordance with their technological nature.

In the midst of all the technological developments which call for the unification of productive and distributive processes, instead of talking of standardisation and flow lines they were and still are talking of "small is beautiful" and actively encouraging it providing plenty of loans. Sweat-shops are full of workers using extremely backward means and methods of production. In the midst of all that technology, child labour is on the increase even in the most developed countries. In the midst of all that technology they are closing down modern mines and buying coal produced by children using spades. In the midst of all that technology peasants are considered

lucky if they have a piece of land and a spade or something to till the land.

Can it be said that it is reasonable to have such means and methods of production when we can have fully automated flow lines and FMS's at our service to supply us with an abundance of goods to satisfy our constantly rising material and cultural needs?. Can it be said that it is reasonable that 20 million people are starving to death every year, many more and in increasing numbers and in even the most develop countries are living in poverty while we could produce everything in abundance?

I do not think it can. We can certainly say that the present mode of production is not reasonable anymore.

3. TRANSPORT. NATIONAL-INTERNATIONAL

CONTINUITY OF PRODUCTION AND DISTRIBUTION

What should be, and could be our transportation policy, what sort of a transportation system could we built?

Formation of computerised electric networks and the electrified and computer controlled rail and pipeline networks to which ocean going tankers and aeroplanes could be connected as required, with automated loading and unloading, is the only solution.

All that we need to achieve such a national-international transportation system is already present. Bits and pieces of it already exist. So. Why is it not happening?

Internal combustion engine has played its part in developing production just as the steam engine did. Just

like the steam engine it is an invention which has lived its useful life and is at a dead end. It should have, as good as, disappeared from the face of the earth being retained only for special purposes. It still survives and nay more is being produced more and more for cars, for it, this dead technology, helps keep a dead social order, monopoly capitalism, alive. It is the backbone of what Mrs. Margaret Thatcher lovingly calls “our car and oil economy”. Defenders of a dead social order are relying on a technology which is dead. How befitting. All the capitalists the world over love this “car and oil economy”, and are actively building it; but non loves it as much as the English and the American ones who control the sources of oil. If they do not control the source of oil itself directly, they control the money generated through sale of oil. Not that the people who are being poisoned slowly but surely, not that people choking to death, not that the children who are becoming asthmatics love it. But than, what can they do? Nothing really, simply more of same, they do not have any alternative. Especially when it comes to making of wars, nothing beats the internal combustion engine on the ground. Such mobility. Such “freedom of movement”...

Can it be said that it is reasonable to formulate a transport policy, and build a transport system based on internal combustion engines, this “oil and car economy”(Mrs. M. Thatcher) which is not only an outright waste of human resources, but is poisoning us and our children, destroying the environment and preventing us from establishing a transport system in line with the requirements of technological developments?

I do not think it can. We can certainly say that the present mode of transportation is not reasonable anymore.

4. RESEARCH AND DEVELOPMENT AND NETWORK OF COMMUNICATIONS

The basis of R&D is education. Without scientific and technological knowledge gained through study it is either impossible or has to rely on such knowledge gained through experience which restricts its development. Computers provide us with the means to connect all to all the sources of knowledge and to each other, thus with the means of education of all in scientific-technological knowledge. All can communicate with each other to solve scientific-technological problems. Computers provide us with the means to connect all to the best laboratories mankind can have permitting all to utilise them for their experiments, etc., etc.

Vice-President Al Gore is quite aware of this. He wants to set up the “super highway”. This way, he reckons researchers will be able to co-operate using the super highway-instead of the highway of Internet which was set up for them for military purposes and has since then became inadequate- products will be designed on the computer, these designs transferred- via the super highway-to the computer controlled machines which will produce the designed product. He reckons incredible results could be achieved that way.

Indeed all he proposes can be done as we have shown above. And more. So, why not even the more dear Vice-President Al Gore. Why connect only the researchers to each other, why not do what we have proposed and can be done for the technology for it is available? Why not connect all to each other to achieve what we have proposed? And indeed why restrict it to the U.S.A.. Why not a “Global Village”. This way, you can get rid of your “warehouses of information rotting”.

Well, even within the confines of the U.S.A., it seems that he can not achieve these incredible results(damn the “chicken and egg dilemma”?) for it seems that he has been working on it for the last 15(yes, fifteen) years.

Well than Mr. and Mrs. super highway lovers: here is Rose, here jump. Lay the super highways . Utilise the super highways-satellites and computers in accordance with their technological nature and connect every-body to each other and to the sources of knowledge and experimentation.

Can it be said that it is reasonable not to connect all to each other, not to avail all of the scientific-technological knowledge and participation in R&D when the technology is there to do so, indeed not to be able to do much less than this and that within the confines of the U.S.A. after spending 15 years on it?

I do not think it can. We can certainly say that the present mode of education and R&D and communication in general is not reasonable anymore.

5. PLANNING

To the extent that all can communicate and this communication lines are connected to the productive and distributive units, the needs of individuals and therefore of the society as well as the capacity of the society to meet these needs can be known and organised perfectly from a centre which is watched by all being connected to this centre. We have examples of this being used, in a restricted form, by all the corporations which connect all their productive, transportation, distributive, sale and financial operations to their corporate computer and plan their world wide operations from this centre, watched by

none but the few oligarch-sorry, the few defenders of democracy and human rights?.

This automatically provides us with a means of transition: all can keep an eye on all that is produced and consumed, all is given a means of controlling what is produced and consumed by all. All becomes managers of factories and the whole social production. This leaves no place to escape to the would be thieves of public property. They would be detected in real time, instantly.

We have no example of these being applied for the whole social productive, distributive activities at all. If, nevertheless we could go back and superimpose this technology onto the planning mechanisms of the Soviets, this is what we would have had. And the Soviets could have began building this by the middle of 1950's. Is it any wonder that the present rulers of Russia who want to become private property owners did not built this system. If they built it, they would have been left with no chance of pocketing people's property.

According to Vice-President Al Gore, it seems that the U.S.S.R. has collapsed because of too much centralism?. Centre being "overwhelmed by ever more complex information".

This is his-and others', idea of a joke I suppose?

What is the complexity of planning of production and distribution which is constantly and openly fed by information from production and distribution units needed and loved by humans when this is compared to the complexity of planning the world wide production and consumption of the most complex military hard-wares and military organisations which has to be supplied secretly with all sorts of variable and unreliable information, which requires totally unnecessary and

artificial devices which do not make sense in the real world of peaceful human beings, not needed nor loved by them but only needed and loved in the world of war like monsters constantly engaged in committing crimes against humanity even when they are designing these hard-wares and organisations?

Nothing. Nothing Mr. Vice-President Al Gore. Give us all the computer power and all the organisation wasted on your armed forces, this monster, and we shall give you a perfect organisation of production and distribution not only in the U.S.A. but world wide.

Or, is it that Mr. Al Gore is planning to destroy what according to him should have collapsed by now being “overwhelmed by evermore complex information”: Pentagon and the C.I.A.?. The Wall street and the Fed. I.M.F.-World Bank etc. These are, as you know, centres which plan world wide operations receiving “evermore complex information” not just from one country but from the four corners of the world and the space.

Well, don’t let us hold you back Mr. Vice-President. Just you go ahead. The whole humanity would be behind you 200%.

Can it be said that it is reasonable to have death through hunger in backward countries, increasing poverty leading to hunger and all sorts of misery in the developed countries, the extreme example of this being provided by Russia, when we can plan our production and consumption of all things perfectly?.

Can it be said that it is reasonable to leave planning of production and distribution in the hands of a few man who are certainly unable to organise these things to the benefit of all and destroy products and productive capacities when all can participate in this process and therefore plan the production and consumption of things

to the benefit of all, increasing products and productive capacities continuously?

I do not think it can. We can certainly say that the present mode of planning, organising our productive and consumptive activities is not reasonable anymore.

6. PUSH BUTTON DEMOCRACY

This interconnection, this network of computers which has to reach every point of production and distribution as well as being centralised to co-ordinate all the activities of all the computers, immediately provides another means of transition. **Transition from the government of men by men to government of things by men. Transition to the dissolution of political life of society which becomes unnecessary.** Thanks to the network of computers which shall become so wide as we have mentioned, democracy becomes what some people have called ‘push button’ democracy. In other words, to the extent that political institutions are still needed, they are forced to act under the direct guise of every member of society who can and does utilise his right to referendum on any and each subject and his right to dissolve any political institution that does not act according to his wishes as well as to sack any political representative who is not doing his job. This is the last form of democracy. As can be seen this is a return back to the Athenian democracy, to the democracy of this slave owning city where the slaves had no right while all the citizens had the right to take part in decision making. Here, there will be no slaves, and here, instead of the history’s wheel turning towards extension and strengthening the executives power and the slave owning class stealing the democratic rights of the citizens, we shall have the

reduction of executive powers leading to its dissolution. And as everyone takes part in making decisions of government and learns to do so while the work of government reducing itself to that of directing production and distribution, democracy, political life of society meets the end of their maker, the oppressing classes, and dies.

So, why do we not have this democracy, after all they love “democracy”. They are the defenders of democracy. They have destroyed “communist dictatorship” for they love democracy. They even refuse to lent money to those who are not democrats? Not easy being a democratic usurer you know.

Well than Mr. and Mrs. democrats: here is Rose, here jump. Put the push button democracy into motion.

Can it be said that it is reasonable to have elections every 5 years or so in which not even half the population participate and the elector can not, once he cast his vote, get rid of the politicians who do not behave themselves- oh no, I am not talking about extra marital affairs or what have you, I am talking about cheating the electorate, lying to them, not defending their interests.. Such boring staff. Can it be said that it is reasonable when we can have referendum on everything and everyday.

Can it be said that it is reasonable for the state institutions to use the computers to watch the citizens instead of citizens using the computers to watch the state institutions?

I do not think it can. We can certainly say that this mode of democracy is not reasonable anymore.

More than ten years ago, a brand new Minister of Information to Her Majesty’s Government Mr. Kenneth Baker, dazzled by the micro-chip technology, was talking of “Athens without slaves”. All those who talked of the plenty that this technology would make possible, all those

who talked of “push button democracy” declaring the end of politicians as a species were clever men. Mr. Kenneth Baker was one of these clever people. As such, he was, of course, a very stupid capitalist, although a clever man. All the same, with the declaration of his idol, Mrs. Margaret Tatcher, that the era of free choice has began he immediately made his free choice and decided to become a clever capitalist and a stupid man. He stopped talking of “Athens without slaves”. Political reforms were and are two to a penny-not to mention the P.I.I’s- but no clever capitalist will talk of “Athens without slaves”, “push button democracy”, “plenty for all”.

Well chosen Mr. Kenneth Baker?

7. IT IS UNREASONABLE

One can point to so many unreasonable developments in the way things are being done that, a whole book could be written on them. Best technique being used to kill people instead of curing their ailments. Old age pensioners shivering and dying of cold while mines are closed down, miners left without earnings to care for their children. Unemployment rising, so is the work load of those who are lucky enough to have a job, and a stress related illness. More and more children are becoming asthmatics, and more and more cars are being built. People are going without meat and butter, they stock-pile mountains of the stuff. No money to have a nice drink, while you could have a swim in a wine lake where they have stock-piled wine. No money to take care of the elderly and the sick, while just the interest of the big banks from the money they loaned could solve the whole world’s problems. And there is always money for killing people. Too much wool, therefore kill a million

sheep, never mind that people can not afford woollen goods to keep warm. Too much milk, kill the cows and stop providing milk to children. Too much food, force the farmers not to produce never mind that people are hungry, and that not just in the backward countries, etc., etc.

No, this society does not make sense to me. Everything is being done in an unreasonable way. In a criminal way. To me it is obvious that things must change so that they make sense to me. Technology should be used as I have described to solve our problems, to provide a life of plenty, a life of knowledge and culture, a life of leisure for all. But it is not enough that only I and a few others see the unreasonable state of affairs. Majority of the working people must realise this fact and declare themselves in opposition to the way things are being done and for the way things should be. Working people must get organised and win political power to do things as they should be done.

Then and only then what is unreasonable and therefore not real anymore will also cease to exist and what is reasonable and therefore real will come into being. The above described society. The communist society.

— VI —

UNREASONABLY PROFITABLE

Above, we have looked at the use of the technology on purely technical grounds and we have seen how unreasonable the way it is used or misused and not used. But why is this so.?

If the technology of production available to us is not being utilised as it should be, it is not the fault of the technology. It is our way of using them, it is our mode of production, our social organisation, the way we arrange our relations to one another that is causing the problem. It is the capitalist organisation of our social life, private ownership of means of production that is the root cause of this unreasonable state of affairs.

The way things are, although productive forces are social to an extreme extent, the ownership of these productive forces, the aims for which they are used, remains private. Those who own and control these forces have but one aim: to make profit. In the case of monopolies which are the true controllers of our destiny, they want to make above average profits, maximum profits. It is not men and satisfaction of his constantly rising material and cultural needs that determines how and why things will be done, it is this profit motive that determines it. A capitalist does not produce food. He produces profit, food is a means to that end. If it is not profitable, he does not produce it. If it is not profitable he does not sell it. If it is not profitable he would not transport it from A to B. If it is not profitable he would not finance its production.

You can say to him 20 million people are starving to death every year, 500 million people are hungry every day and you can produce more food, why don't you? He will tell you, why should he, he can not sell it to those starving people for money, and profitably at that. So why should he? He is a banker and drive the farmer bankrupt. He is a European Commissioner working for the banks and pay the farmers not to produce food, for it is more profitable not to produce the food.

Vice-president Al Gore will have us believe that it was the "old agricultural policy, which left grain rotting in thousands of storage silos while people were starving". This is said when everyone knows that it is not only the European Union that pays farmers not to produce the food they could produce. So does Al Gore. What difference does it make to the hungry and starving whether you rot the food in the silos or whether you do not produce it in the first place? This is said when there are hungry people in Europe and the U.S.A. and every year 20 million people are starving to death in the world.

All will agree that making of military hardware and running military organisations is a very profitable business under capitalism for the capitalists involved in the business. Is there any sane individual out there who does not realise how unprofitable for the society, for humanity this business is. Not only do you end up spending your best industrial potential on that, you also end up destroying already built up factories, houses, etc.,-oh yes, you also kill people. Almost forgot that.

So what? It is profitable. Very profitable indeed. It also provides a "Leisure Shock" for us. You can watch generals on T.V. proudly showing their computerised-clever bombs hitting the target. Not quite the sort of entertainment Barrie Sherman and Clive Jenkins had in

mind when they were talking of the “Leisure Shock” computers would make possible for us while capitalists go on running the show.

Well, they do say “beggars can’t be choosers”.

It is all very well to produce for profits. When you have crises, as you have to, you destroy products and productive capacities, rebuilt them adjusting balances in the economy and carry on. Misery this causes is no big deal. That’s life that is !?

What this rebuilding lead to when the computers are around? Are we facing something new?

INCOMPATIBILITY OF COMPUTERS AND MONOPOLY CAPITALISM

Utilisation of the computer technology leads to the elimination of the labourer in production and in distribution. Is it possible for the monopoly capitalism to achieve this.

The very basis of capitalist production is the surplus labour, in its surplus value form, produced by the working people. If the production and distribution is automated and made continuous to the extent that they can be, utilising computers as we have described above, there would not be many workers left to run the production capacity owned by the capitalists and therefore not much of a surplus value would be produced for the capitalists to accumulate. In fact, we can safely equate the number of workers and the surplus value that could be produced by them to zero (0).

Let us put it in another way. In relation with the beloved market of capitalists. Utilisation of computers to their full potential leads to automated and continuous production and distribution. This means very few,

practically none number of technically expert labourers are needed to satisfy even a bigger market than they have now. And yet most will be unemployed, and therefore the markets will not expand but shrink. Capitalism will face a crises of overproduction which is unresolvable. To the extent that very few people are needed to produce all the needs of the capitalist markets(not the needs of the people), and as the market is dependant on the buying power available, their markets will collapse to the level of buying power of these few. All that productive power and no one and I mean no one, to buy their products.

Impossible.

They can never get there for there they can not exist anymore. **Provision of abundance of products to meet the needs of the people is an absolute impossibility for capitalism.** It is the end for them. Therefore, they will do anything to stop this development of computerised production becoming a world wide phenomenon.

IN THE MEANTIME

But what will this mean for the multitude in the mean time, for monopoly capitalists will be forced to employ this technology here and there, to this or to that extent however hard they try not to use it. Competition amongst the monopolies will see to that. Certain professors have already called upon the world capitalists not to allow competition to drive them into using this technology. Why?

For it will create chronic unemployment. The more they use it, the more can be produced with practically no workers.

The classic problem of capitalism of overproduction faces us under a new condition. Solution of over capacity through the destruction of products and productive potential and in order to rebuilt them with even more productive technology will lead to building factories that do not need workers. Not only can these factories produce more and faster, they can produce without workers. Unemployment will rise while the productive capacity rise even faster and the markets will shrink continuously compared to the rise in productivity.

Unemployment and misery will rise continuously.

They have long since giving up on governing the world. They are engaged in what is called crises management which utilises creation of further crises to manage crises. That is the only way left for them. Developing capitalism in backward countries which will only perpetuate their market problem further; “civil wars”, local national wars, leading to bigger wars providing destruction and therefore business opportunities in re-building are the last straws they are hanging on to. The era of destroying factories and farms to resolve crises have gone forever. **The era of destroying countries to resolve crises is in full swing.**

They can not go where the technology is leading them, for it is impossible for them, yet they have to use this technology. The more they use them, the more problems they create not only for the working people but also for capitalism. At the end of the tunnel the sign reads: **THE END.**

Under these conditions, every step they take forward using the computer is a step back leading to barbarism. Everyday we see examples of this barbarism. More and worse ones are on the way.

— VII —

WHAT IS TO BE DONE

Things must be produced not for the above aim in view, but to achieve the aim of satisfying the constantly rising material and cultural needs of the people. Than, everything falls into its place. Than you can make plans and achieve them and the centralisation is not a problem but a means to achieve this aim for which the computers provide us with the perfect tools.

How could the society start producing to achieve this aim. For this the common ownership of the means of production is a must. If we do not own every means of production in community, as a community we can not utilise them to serve us all. The present owners, the present controllers of them will not allow it. You can see the length they are going not to loose their control, their ownership of these means of production.

They love talking of freedom of choice. Let us take this opportunity to remind them the choices they have: either pass the ownership of all the means of production to the working people or lead us all to barbarism, to destruction.

Choice is yours.

As to us, the great majority, we do not have a choice really. We have to transform the means of production into our common property and start producing and distributing goods in order to satisfy our constantly rising material and cultural needs. Any other so called alternative is no choice for it means misery, starvation, wars, destruction. It means barbarism.

No, we have no choice in this matter.

We either achieve common ownership of productive forces, or we face years of misery leading to destruction in the hands of barbarians.

TRANSITION TO COMMUNISM

The very first plan of construction of the victorious Soviet proletariat was that of electrification of the country. The formula of V.I. Lenin that

communism= electrification of the country + proletarian dictatorship

is world famous.

The very first plan of construction of the victorious proletariat(proletariat of whichever country has the honour) will be the computerisation of the country, which includes the electrification of the country. Lenin's formula has not lost its validity, but it is no longer complete. The new formula of communism is,

communism= computerisation of the country + proletarian dictatorship

The basic elements of this plan of computerisation, what it should aim to achieve is already contained in our definition of the communist society which we have presented to the reader.

To achieve this, we shall need a period of transition which will depend on the technological capacity of the country where the proletariat is victorious, on what sort of havoc has been wrought upon the society by the

barbarians, on what sort of internal and international conditions face us. But one thing is already clear: **Workers must assume political power and retain it all through this transition period.**

The most important tools available to this political power till it puts an end to itself will be provided by the networks of computers:

1. Continuous and instantaneous control by all the people of all that is produced and consumed by all.

2. Continuous and instantaneous referendum by all the people on all the political decisions

In short, a continuous and instantaneous watch by all the citizens on all aspects of society's development.

All through this transition period, the scare story of the "Big Brother" will not go away. Every citizen shall become a "Big Brother". **The state that watches will be watched.**

NOTE : A FREE SUPER HIGHWAY

If vice-president Al Gore has spent the best part of the last 15 years of his life to lay the super-highway without success, the reason is that super profits and monopoly of markets needed to achieve this is not ensured for the monopolies that can built it. Al Gore's attempt to scare them with the competition of other nations will not do either. American monopolies do not scare easily of competition for under monopoly conditions there is more to competition than being the first with the best technique and being the cheapest. There are such things as spheres of influence, contacts, bribes, threats, violence, wars, etc. But, had he made it profitable for the monopolies involved, say by paying $100.00 for a screw as was the case with the military contracts, and find a way of insuring their monopoly, he would have had his super-highway in no time.

While vice-president Al Gore is having all sorts of problems, Tony Blair has just arrived at an agreement with British Telecommunications plc. which has been confirmed by no less a person than one of its directors, Lord Tebbit, the very same gentleman who would not mind being known as the man who made it possible for Mrs. M. Thatcher to win the election. That, of course, was long after Mrs. M. Tatcher was called "Thatcher the milk snatcher" for stopping the provision of FREE MILK to the school children. Tony clears a hurdle Tebbit has(B.T. is not allowed to enter the market), Tebbit gives what Tony wants(free propaganda) and if it all comes to fruition, Tebbit gets it all. All the schools, Hospitals, Libraries connected to B.T.'s super highway. Do not Imagine what John Lennon wants you to Imagine, Imagine this: Tebbit's B.T. connects these all "free of charge".

Who needs free milk when one can have a free super-highway?

What on earth does B.T. sell? Electrical, or light signals. Bits as they are called these days. How can it transport its products. Through copper or in this case optical cable lines and satellites. There is no other way B.T. can sell anything. So, what is free? They have to lay the lines, they have to connect the premises to these lines, anyway. Will they not charge these establishments when they are using the “Free Super Highway”?. If they do not, will they not charge the state or other users extra?. What happened, B.T. gave up its profit motive or something? They do not want to make £ 100.00 a second profit anymore? The only free dinner(on top of his free propaganda) Tony will get will be at the expense of us all. This is always the case with capitalists. They accumulate what the workers produce. It is called profit.

In the mean time, while we have to wait for Tony to provide us with “free” connections, Mrs. M. Thatcher and Mr. J. Major have already provided us with a “free” connection: connection of England to France by the Tunnel Under the Channel.

Still, just you go ahead gentlemen. Far be it from us to hold you back. Connect all these institutions through a super highway and while you are at it do you mind if we use it to have referendums on all the issues. After all we already have many schools and hospitals and libraries in each locality? Many of these schools we use as polling stations. Why not use them with their inter-connected computers as continuous polling stations on everything and everybody.

Well, there is still hope if we can get Lord Tebbit and Tony Blair to agree to Push Button Democracy. Then, we all become part of a big family joined together through

Tebbit's super highway, deciding on everything together, doing everything in the open, not needing to pass the cricket test, not having to be realists who have to ensure profitability to C.B.I., to City, etc., etc. (and its all free) Imagine that.

Shame on you Mr. Kenneth Baker and Vice-President Al Gore and Prime minister John Major. Tony and Tebbit and us lots are going to built our super highway and practise push button democracy; we are going to have "Athens without slaves", a "classless society" "achieving incredible results" in our "global village", while you have shunned away from it all.

Well. We are going to do it are we not dear Tony and Tebbit?

Of course, a science fiction writer could create a bad old world in the 4th dimension of the space where Tony and Tebbit wouldn't hear of push button democracy, where Athens is full of slaves, where working class grows bigger and poorer, where the only incredible results of computer technology can be watched on global T.V. when the American-European generals show us how accurate their cruise missiles and clever bombs are in killing people. But we all know there is no 4th dimension of space, we all know it is just a science fiction. Tony and Tebbit who will lead us into the world of push button democracy etc., live in this real world.

Common Tony, common Tebbit. Declare yourselves openly for the push button democracy. Then, everyone will love you for what you are not!

"Not only do they make the time for all to study available by automation of national-international production-distribution process, but they also provide the means for education. All can have a British Library and the best minds in different fields as lecturers through 'the information super-highways'. All can communicate with one another to exchange information and co-operate to solve scientific-technical problems, as well as control the production and consumption of each and everything. Thus, the speed of development of scientific-technical knowledge reaches the "speed of light". Thus, the cultural development of each individual is assured and time for sportive activity to develop man in physically perfect form and time for social activity to develop man in spiritually perfect form and the means for these are made available.

This is a new form of society based on the slavery of machines to men made possible by the computers. This is a new form of society based on communication of all with all made possible by the computers. This is a society where the wealth can be produced in abundance. This is a new form of society based on the co-operation of all. It is impossible without this co-operation. Division of society into classes comes to an end.

Call it what you will, but it is called a communist society, a society of co-operating individuals.

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