CAPITALISM AND NEW TECHNOLOGY
- material submitted for discussion by McInnes
1
Capitalism
& Technology

Introduction

The long economic boom that began after the second world war ended in 1974. This was partly overshadowed at the time in Britain by the dramatic events of that year. Conservative attempts to curb working-class power had culminated in an election based on the clear-cut class issue, ‘Who Rules?’. The incoming Labour government only contained this level of militancy by conceding massive wage increases, several major new pieces of employment legislation, and the admission of a host of trade union officials onto existing and newly-created state institutions.

However, 1974 was a turning point for all the Western capitalist economies. Among the members of the Organisation of Economic Co-operation and Development (the organisation that represents all the main capitalist nations), industrial production grew continuously with only minor fluctuations throughout the post-war period, but between July 1974 and April 1975 it declined by 10% and unemployment leaped from a low of eight million during the boom to 15 million by the spring of 1975.

In Britain the value of shares on the London stock market slumped by 50% in 1974—even more than during the celebrated crash of 1929. Industrial production declined for two successive years. All over the country workers were being laid off and made redundant, and unemployment reached its highest level since the 1930s. Although money wages did continue to rise, the real wage—what that money could actually buy—fell for the first time since the war. As the gap between the state’s income and expenditure widened, it was faced with a fiscal crisis and for the first time since the welfare state was established after the war, plans were announced to cut its services.

This is the background against which microelectronic technology has been developed. This is a new technology that replaces transistor based electronics. Whereas in the past, complete electronic circuits
The cycle of capital formation

The cycle of capital formation includes the process of accumulating capital through the sale of goods and services, which is then reinvested to create more capital. This cycle is crucial for economic growth and development. The cycle begins with the production of goods and services, which are then sold in the market. The earnings from these sales are then used to purchase new capital goods, such as machinery and equipment. These new capital goods are then used to produce more goods and services, which are sold in the market. This cycle continues, with the earnings from the sale of goods and services being used to purchase new capital goods, which are then used to produce more goods and services. This process of capital formation is essential for sustained economic growth and development.
The increase in continuous improvement in production has led to a decrease in the number of workers needed to produce the same amount of output. This is due to the fact that the efficiency of production has increased, allowing fewer workers to produce more output.

In the past, workers were responsible for all aspects of production, from raw material preparation to final product assembly. However, with the advent of automation and advanced manufacturing technologies, these tasks are now performed by machines and robots, freeing workers from the monotony of manual labor.

The benefits of this increased efficiency are significant. Workers are able to focus on more complex and creative tasks, leading to increased job satisfaction and productivity. Additionally, the reduced need for manual labor has led to a decrease in the overall cost of production, benefiting both businesses and consumers.

Moreover, the focus on continuous improvement in production has helped to reduce waste and improve quality. By identifying and eliminating waste, companies are able to streamline their processes and produce a higher quality product.

In conclusion, the increase in continuous improvement in production has led to significant benefits for workers, businesses, and consumers alike. By focusing on efficiency and continuous improvement, we can continue to drive innovation and progress in the field of manufacturing.
Workers' resistance

Capitalists experience the tendency of the rate of profit to fall as a need to rationalise and cut their costs. They therefore attempt to increase the intensity and productivity of the work of their employees. However, in attempting to do this capitalists are forced to confront the organised strength of the working class and in the course of a boom, conditions become more favourable for workers to resist capitalist demands.

Capitalists employ workers because they are necessary to produce a profit. As with any other commodity that they pay for, capitalists would like to be able to do as they choose with labour-power. What they want from workers is continuous work of the greatest possible intensity. But capitalist management has to find some way of enforcing this.

As far as workers are concerned, they go to work for a capitalist because it's the only way they can get the money that is necessary to live. There is therefore economic pressure on workers to conform to the demands of management, since insubordination might lead to the sack. This is particularly true when there is a large pool of unemployed. However, as capitalists employ a growing number of workers in a boom, the prospect of unemployment becomes less threatening.

In any job that depends on workers' skills, workers have to exercise some control over the labour process and this is a source of power that can be used against management. If only workers understand how a job is done, then management is not in a position to exercise detailed control over it.

The development of new technology has been one of the most important means that management has used to break workers' strength. When a machine incorporates the skills that were previously exercised by a worker, then the worker is deprived of this source of power, and management can use the machine to regulate the speed and intensity of its operators' work.

However, subordination is never established once and for all. Although management introduces technology to increase its control over the labour process, when workers find their feet in the new situation they set about rebuilding their strength. If workers are necessary for a capitalist labour process, they cannot be completely powerless. Since they observe the operation of any new technology at close quarters, day in and day out, they soon discover the weak points in a system. Any vulnerability is a source of strength that can be used to develop new forms of struggle.
Capitation of Technology

Development of new technology should be applied to the productive plant of capital. In this way, the productivity of workers in an industrial firm is increased. If successful workers are in an economy, the output of capital is increased. However, the productivity of workers is dependent on their skill levels. Therefore, the productivity of workers is increased.

To increase the productivity of workers, the economy needs to focus on the education and training of workers. The education and training of workers should be focused on developing their skills and abilities. This will increase the productivity of workers in the economy.

The education and training of workers should be provided in several ways. First, the education and training of workers should be provided through formal education. This includes schools, colleges, and universities. Second, the education and training of workers should be provided through informal education. This includes on-the-job training, apprenticeships, and mentoring.

The education and training of workers should be focused on developing their skills and abilities. This will increase the productivity of workers in the economy.

In conclusion, the productivity of workers is dependent on their skill levels. Therefore, the productivity of workers is increased. To increase the productivity of workers, the economy needs to focus on the education and training of workers.

References:


Appendix:

The education and training of workers should be provided in several ways. First, the education and training of workers should be provided through formal education. This includes schools, colleges, and universities. Second, the education and training of workers should be provided through informal education. This includes on-the-job training, apprenticeships, and mentoring.

The education and training of workers should be focused on developing their skills and abilities. This will increase the productivity of workers in the economy.

In conclusion, the productivity of workers is dependent on their skill levels. Therefore, the productivity of workers is increased. To increase the productivity of workers, the economy needs to focus on the education and training of workers.

References:

bottleneck. Since the introduction of new technology is usually resisted by workers, depressions tend to be periods of intense struggle in which capitalists are by no means assured of success in implementing the technology that has been developed.

During the third quarter of the nineteenth century, for example, the production of pig-iron became a major bottleneck in the long boom based on the production by machine of machines made of iron. The production of iron depended on highly skilled puddlers who formed balls of pasty, half-molten iron on top of a puddling furnace and then drew it off. They were well organised in skilled unions and repeated attempts to break their control by mechanising the process failed. The capitalist solution finally lay in bypassing the problem entirely and producing steel. Previously steel could only be produced in tiny quantities, but now, with the invention of several new production processes, it could be produced in bulk. The giant US steel industry grew on the basis of these new techniques, though their introduction was resisted by the skilled-workers' union which was finally broken after a long, and at times armed, struggle. In Britain, by contrast, workers' organisation not only survived the transition to steel production, but it broadened its base in the ensuing struggle to include less-skilled workers and workers succeeded in maintaining control over the labour process.

Restructuring the working class

The composition of the working class that has been employed during each long boom has been different from that which was expelled during the previous depression. There have been two main elements in this process of recomposition.

Firstly, skilled workers who have been the most highly organised have been displaced by workers who have less training and who do not usually have the same organisational traditions. During the post-war boom there was a massive expansion in the employment of women workers. A substantial black working class was also created.

Secondly, there has been a shift in employment away from the direct process of production. This has involved an expansion of technical and office work, and the growth of the state as a major employer.

When technology is used to remove control of a labour process from the immediate workers, someone must be able to design and understand the new system. A few highly-skilled jobs are created, but once these tasks expand to employ more than just a tiny elite, the new jobs are themselves subjected to a division of labour and the more routinised parts of the work are separated out leaving those parts that continue to require much initiative concentrated in the hands of a few individuals. This separation of the process of conception from that of execution, even within the most technologically advanced sectors of the economy, has resulted in a polarisation between a few key personnel and a mass of routinised technicians.

Office work has expanded for several reasons. One is the need to look after the commercial and financial affairs of big companies. The size of companies has continually increased as profits have been reinvested to expand the scale of production and as a result of mergers and takeovers. A large number of office staff are needed to organise the transactions of a big company which may involve different plants, or even different countries.

Office work has also expanded as a result of attempts to shift knowledge and control away from the factory floor. In addition to using technology to accomplish this, capitalists have developed sophisticated techniques of work-study. These were first systematised at the turn of the twentieth century by F. W. Taylor, who called his new discipline scientific management. Taylorism, as it has become known, involves systematically studying a job, no matter how complex, in order to identify each type of task that must be performed. Once management has appropriated complete knowledge of a job, by documenting every possible variation that can occur, it is in a position to take command. Each worker can now be allocated just a detail to work on under strict management supervision. But once the immediate workers have been deprived of knowledge of the labour process, then every stage has to be monitored and recorded.
Class Working and the Technology Capitalists

Microelectronics

Justify the cost that the Frenchman makes of his own and of others' time, and in so doing he seeks to improve his own efficiency and to increase the efficiency of those around him. The time spent on the development of new technologies and the training of workers is a crucial part of the process of improving efficiency and productivity. The Frenchman's dedication to improving the efficiency of his work is evident in the way he meticulously examines and analyzes each component of his projects. He is constantly seeking new ways to optimize his work, whether it be through the use of advanced technology or by finding more efficient methods of completing tasks. This dedication to efficiency and productivity is not only beneficial to the individual, but also to the nation as a whole, as it contributes to the growth and development of the economy.

On the other hand, there are those who believe that the emphasis on efficiency and productivity comes at the cost of creativity and innovation. They argue that focusing too much on efficiency can stifle the creative process and limit the potential for new ideas and breakthroughs. While it is true that efficiency is important, it is equally important to recognize the value of creativity and innovation in driving progress and advancement.

In conclusion, the Frenchman's dedication to efficiency and productivity is a testament to his work ethic and commitment to excellence. However, it is important to balance this focus on efficiency with opportunities for creativity and innovation. By doing so, we can continue to improve our work processes and achieve even greater success.
New Technology

Management's desire to achieve ever-greater control has gathered new strength in the 1980s with the introduction of microprocessor technology. This works in two ways. First, gadgets based on the chip can capture and feed back to the management a mass of detail on how work is actually being done. This information helps management to keep tabs on things, but it also provides them with the knowledge which they can then use to reshape the production process. Second, microprocessor technology enables management to use this knowledge to install a more subtle and flexible version of automation. The skills of workers are now being emulated in chip technology and programmed routines, where they are management's property.

A first priority, then. In no move to win back control over our working lives, is to find an effective answer to the inroads which New Technology is making into the skill-content of jobs. Practically speaking, this should be selective opposition rather than out-and-out rejection. There are a number of rules-of-thumb for recognising features of new systems which take control and skill away from the worker. The questions to ask are:

Does the new system:

i) incorporate new provision for monitoring the speed or accuracy of individual workers?

ii) permit the automatic collection of data on worker-controlled operations which would help management to automate them at a later stage?

iii) make the worker respond to the system, rather than have the system respond to decisions by the worker?

iv) abolish an old skill without creating a new equivalent skill?

Evidently most of these questions should be asked for any new technology, whether microprocessor-based or not.

If the answer to any of these questions is 'Yes', then workers should organise to resist these features of the proposed system. There is no technical reason why such features need appear in production systems and there are alternatives. They will be programmed if workers' opposition can be made effective.

In the process, not only quality but the quantity of jobs should be increased. But in areas where the application of new technology results in the need for less labour inputs, and reduction in jobs whether by redundancies, early retirement, or by natural wastage, it should be resisted. Demands should be for shorter working week, longer holidays, and 'sabbaticals' for further training or study. Further, any time set free from the treadmill of work could well be absorbed by the demand for trade union use of 'liberated time' at the workplace, which will be set out below.

The demands are designed to provide a breathing-space in which more effective means of improving workers' control over their own labour power can be worked out. Defensive demands protect individual workers' skill and control; but real control is only possible on a collective basis. One requirement for this is collective knowledge. This makes the call to 'Open the Books' a key demand. But it must not be interpreted narrowly as applying just to details of the firm's income and expenditures. Financial information of that kind is useful for pay bargaining. For bargaining over control, what is needed is information about what use management is making of existing control systems, or plans in make of proposed new systems. One trade union demand should be the right to see the feasibility study report plus the system specification for any new scheme management proposes to introduce. Here we can learn from the extensive Scandinavian experience of trade union branches commissioning and controlling research by university computing and system staff into the effects of management proposals.

The worker's interest - in satisfying work and socially useful products - will in many or most cases run counter to that of management. For workers to be able to counter management effectively the issue is not only one of relative power: they will also need to match management's sophistication, a sophistication gained through management's long domination of decision making. Management plans. So trade unions will have to find ways of planning also. Without planning, workers will be like a chess player who does not think more than one or two moves ahead.

Since management plans on a company-wide basis, the multi-plant trade union combine will, for many purposes, be a more effective counter-planning unit than individual unions or branches. (For subsidiaries of transnational corporations, good links with corresponding workers' organisations abroad will greatly increase workers' ability to respond to and anticipate management initiatives.) One inspiring example of what can be done is the Lucas Aerospace Combine Shop Stewards Committee's alternative corporate plan for Lucas. From the knowledge of unionised workers within the company, they generated a host of ideas for socially useful products, which could be made using the existing equipment and the available skills within the workforce. Several of these - the 'Hobcaw' for children suffering from spinal bifida, the hybrid petrol-electric power pack for cars, the road-rail vehicle - have already been taken through to prototype stage or beyond, though not by the bosses of Lucas Aerospace.

The right to engage in such planning should become a trade-union negotiating demand. It has been called the demand for 'liberated time' - time at the workplace for office and production employees to work together collectively in support of their own interests.