

An Orthodox Marxist Critique of the Third Wave Study Group: Do Computers Change the Face of Capitalism or Only Give It a Facelift?

By Class Struggle

There is wide discussion in the media today about the impact of computers on society. Columnists speak of the digital age, and it seems like no copy of a magazine or newspaper is complete without a mention of the Internet. The left too has jumped into this discussion.

One group based in Chicago called the Third Wave Study Group has issued two numbers of a magazine called *cy.Rev: A Journal of Cybernetic Revolution, Sustainable Socialism & Radical Democracy*. The first issue, with articles by Carl Davidson, Jerry Harris, and Ivan Handler, who once had been active in the New Left and the Maoist movement, was submitted to the founding convention of the Committees of Correspondence. They claim that:

"The microchip's impact is changing everything about our world and the way we live. Civilization is undergoing a quantum leap on the order of the agricultural revolution launched 6000 years ago and the industrial revolution launched 200 years ago. We have now entered a third period of human history. We prefer to call it the information era." These changes are a "revolution in the means of production. New technologies have changed the face of capitalism, affecting the economic base, the relations of production, and are impacting political strategy."

It's true that computers are touching all sectors of economic life. As capital goods, they are employed in product design, drafting, running machines, keeping track of inventory, quality control, monitoring workers' production, in financial accounting and marketing, locating trucks and railcars around the country, taking stock in retail stores and automatically sending new product orders in to manufacturers to re-initiate the productive process. They were used by forty million people at work in 1989 and by even more so today, in every aspect of capitalist production, distribution and finance. Millions of workers have their paychecks automatically deposited to their bank accounts, pay their bills and obtain money through Automatic Teller Machines. Moreover, some thirty-five percent of families have a computer in their homes. Millions use computer networks like CompuServe or Prodigy to play games, send mail, shop, and get news and information. Millions of children play Nintendo and other computer chips are built into TVs and VCRs and their remote controls, and in new models of cars.

This is not the first time a new technology has changed "everything about our world and the way we live." In the last century alone, there were other technological changes which affected every work place and consumer in a manner we can compare with computers today. Electrification brought better light and a flexible power source to every work site. It spread to every home, drastically reducing the amount of household labor through labor-saving machinery, and bringing entertainment and news into the home via radio and TV. Motor vehicles enabled every capitalist firm to get its inputs and distribute its products to market without railroad connections, vastly enlarging the scope of markets. Horse transportation was quickly made obsolete and the entire population obtained a type of mobility that had been accessible only to the rich before. Computerization, in fact, is just the latest of such major technological changes.

Such a change can't compare in historical significance with the prior transformations Davidson, Harris and Handler write about, transformations that resulted in tremendous change in the life of humanity.

The agricultural revolution brought an end to the old classless societies based on a hunter-gatherer technology, and led to the development of cities, ruling and exploited classes, the state, and the rise of civilization. The industrial revolution gave rise in a few short years to the modern factory proletariat amidst the ruin of the artisans, and led to an exceedingly rapid development of the productive forces, spreading capitalism around the world. Both the agricultural and industrial revolutions led to a big leap forward in the overall productivity of society and above all changed the relations between producers and the rulers. So far the impact of computers has been in no way so profound. No new social classes have emerged; no classes have been destroyed. Not only that, but they haven't capitalism to resolve its immediate problems. Computers have been introduced widely starting in 1973, but the whole period since that time has been marked by slow economic growth and the lack of productive investment, the opposite of the relative surges of output that occurred in the agricultural and industrial revolutions.

Today the old cash register may have been replaced by a computer that scans bar codes and tells us the bill, but it's the same money that has to be paid for the sale. The Third Wave Study Group says it's changed the face of capitalism, but behind the facelift, it's remained the same old exploitative social system of capitalists and working class. Whether computers are the technology that will inaugurate the "third period of human history" remains to be seen ... to say the least.

The Impact of Computers on Capitalism

The Third Wave Study Group tells us that in the Information Era, the new period we are supposed to be in, "the application of knowledge is now the primary means of new value production." Elsewhere they say, "Physical labor and industrial machinery are now secondary to the value added by information." Perhaps this will be the case in the future, but it's not true now. In this country, which is the most advanced in the use of the new technologies, tens of millions of non-technological workers spend tens of billions of hours a year working in production, extractive industry, transportation, sales and services, creating new value, and far eclipsing the amount of technical labor or "information" expended in society.

Further we are told that computers are now, "the most important tool of production." No method is given for determining what the authors consider most important, but when valued in terms of dollars of accumulated investment, in 1993 computers made up 10.3 percent of all equipment owned by capitalists. A disproportionately high share of these computers is employed in finance, which doesn't produce anything; thus computers make up a lesser share of the tools used in actual production. In the ordinary vulgar terms of what the capitalists pay for them, this hardly makes computers the most important tool of production.

As for the new technology itself, we are told that, "Intellectual capital, developed and held by knowledge workers and encoded in software and smart machines, is the key element of wealth in today's information capitalism." Again no method is given to show how the authors determine what's key. No doubt a computer chip without the circuitry would have no value, but the design by itself doesn't make a chip without the productive process and the employment of various types of labor. In specifying something about the computer industry itself, they say, "computer technology consists almost entirely of intellectual capital, with raw materials costing only one percent and unskilled labor five percent." Such statistics can only mean they ignore the fact that computer chips and computers are produced in factories employing massive amounts of physical capital. IBM has fifty-eight thousand dollars invested in machinery for each worker compared to the forty-five thousand dollars per invested by General Motors. Intel, the major manufacturer of Central Processing Unit chips for personal computers, is building a new factory in Albuquerque, New Mexico that will cost one billion dollars,

including the building, automated chip handling equipment and clean rooms, comparable in size to an auto plant. The production of computers includes power supplies, circuit boards, computer chips, video monitors, disk drives and printers, all of which also embody diverse types of labor, both in raw materials and in assembly.

So it's hardly the case that embodied knowledge is the key element of wealth at least up to now. At most it's what the Third Wavers would like to see. But saying so today boils down to creating an ideology that promotes "intellectual capital," thus giving it a special political role.

Computers and Job Loss

The Third Wave Study Group sees computers as having a major impact on jobs: "In third wave production only a few workers are needed to produce goods of much greater quality and sophistication. This is due to the embedding of microcomputer technology right into the tools of production. By organizing work so most of the manual tasks can be done by technology, the number of workers needed to carry out the task gets reduced dramatically The third wave guts entire workforces and industries to the point of collapse."

The introduction of computers, like the introduction of any major technology in capitalism, has a contradictory effect on jobs. The balance sheet of whether it creates or destroys more jobs can't be determined by grand pronouncements about sweeping trends, but only by a concrete examination of the job impact.

Of course computers immediately caused job losses in the manufacture of typewriters and mechanical calculators, which they directly replaced. They have also reduced jobs in certain particular industries.

In the telephone industry, for example, computers have replaced the vast majority of operators. In the chemical industry, companies have removed workers from the refinery apparatus, replacing them with automatic controls, and concentrating the remaining workers in the control rooms. At the level of the economy as a whole, statistical studies show that when more computers are introduced in an industry, the share of white collar workers increases and the share of blue collar workers decreases. But the effect isn't automatic or immediate. And computers are not the only cause of decreases. For example, in the very same period when computers were being introduced, the working class has fought very few fights to resist the increased physical intensity of labor. Furthermore, the introduction of computers require more workers rather than fewer for several years, as the change disrupts production. Not to mention the fact that as many workers know often the computers don't run right and it's especially difficult to coordinate different types of computers with one another. Workers have to learn new skills, which takes time, and often their productivity drops during the process.

On the other hand, with the massive introduction of computers since 1973, we've seen the growth of entire new industries. Today hundreds of thousands of workers are employed in new plants both in this country and in Latin America and Asia making semi-conductors and computers and all the parts and components that go into them. Further there are software programmers, those involved in the sales of computers, computer maintenance workers, and numerous specialized computer workers in industry. Computers and microchip technology may dramatically raise the productivity of certain machines, but that doesn't automatically mean that there is a decline in jobs. If the output of the industry in question is growing rapidly, rapid rises in productivity may go along with job growth. But what is striking is that the overall rate of growth of productivity of the U.S. economy is lower since 1973, the period of

both capitalist stagnation and the massive introduction of computers. Though computers have the potential to rapidly raise productivity, this hasn't happened so far at the level of the entire economy.

The technology for the automation of entire industries has been available for a number of years, yet the automation isn't applied. Because the Third Wave forgets that it isn't simply a question of what is technologically possible. The capitalists often have massive investment in the old technology which would be made worthless if they put in large new investments. The decision to invest is like every other investment decision in this society, is determined by its possible effects on profitability. When the rate of profit is low, capitalists often avoid making possible investments. Obviously this has occurred in many sectors, where they haven't put in all the technically feasible automated equipment, or even all the technically feasible equipment of earlier technology.

So up to now, entire workforces and industries haven't been gutted by the introduction of computers. The world described by the Third Wave Study Group may be the world they wish, in which intellectual capital and knowledge workers would reign, but it isn't the real world.

The Knowledge Workers'

The Third Wave Study Group says the new technologies have not only affected the economic base of capitalism, they have changed the relations of production. They say three main groups of workers are impacted: the new "knowledge" workers, the declining blue collar workers and the increased ranks of the unemployed. They describe the "knowledge workers" as "a dynamic and growing force of skilled analysts, designers and technicians, filling the jobs created by the new technology." Turning to their conditions at work, they say, "The economic organization of knowledge workers emphasizes less hierarchy, less bureaucracy, more information about and control of the job process, and greater participation or empowerment at the site of work." So they have created a category of workers that are involved with the new technology so-called "knowledge workers." The problem with this category is that it doesn't group people by their social relations to the mean but instead by the technology they work with.

Some people using the new technology, like salaried programmers and electronics technicians, are skilled white collar workers involved with production much like draftsmen or tool and die workers. They are exploited by the capitalists who pay less for their labor power than their labor contributes to the product they help produce. By level of pay, lack of autonomy on the job, domination by managers, and in various cases contact with blue collar production or transport workers, they are just a part of the working class, whether they see it or not. Many knowledge workers find themselves at the bottom of a corporate hierarchy where they have to do very detailed work, not much different from that of a skilled trades production worker. IBM for instance, which is by far the biggest company involved with the computer industry, is notorious for its heavy management structure, which certainly leaves little room for "greater participation or empowerment at the site of work."

Other "knowledge workers" are self-employed as programmers or computer consultants. They are a part of the petty bourgeoisie, who neither employ others nor are employed themselves. Still other "knowledge workers," particularly computer and electronics engineers, work closely with management and have considerable control over their job process. Others supervise workers and become integrated into the managerial hierarchy of control over the work process. They are given a certain status by this society. Their salaries well exceed not only those of blue collar workers but also other "knowledge workers," and they enjoy more pleasant working conditions. They have opportunities to enrich

themselves through investments in stocks, bonds, and real estate, all of which gives them a stake in present society and turns their interests against the working class.

Obviously the Third Wavers include in one single category to which they attribute common interests and the same political role people who ... belong to antagonistic social classes.

Knowledge workers play no important role in the economy without the millions of workers they are linked to. Think of designers and computer programmers working in the auto industry. What is the meaning of their work if hundreds of thousands of workers don't make the steel, rubber and glass that goes into cars, if auto workers don't build cars, and the truck and rail workers don't transport the finished product to the dealers?

The supposed advantage of knowledge workers are their political concerns. The Third Wavers speak of a progressive sector of knowledge workers, whose concerns are "ecology, disarmament, peace and human rights issues, and expanded access to information and education." In fact, much of the new technology was developed for military purposes and many knowledge workers are involved in production connected to arms. It seems doubtful that those working in military production would have any greater interest in disarmament than other sectors of society, especially in the absence of any big social movement challenging militarism. In any case, we have no indication of this. The same is the case with human rights. Both the aerospace and computer industries have suffered massive layoffs in recent years. It's unlikely that many of the white male knowledge workers have become advocates of affirmative action when their jobs are under attack and the dominant ideas in this society blame minorities a white men's loss of jobs. Again, there's no indication of this. That's why rather than examining what knowledge workers actually feel about disarmament and human rights, the Study Group simply asserts that these are their concerns.

The Third Wave Study Group says that, "When socialism embraced the proletariat as the primary agency of progressive change, it also tended to romanticize industrial society." Rather than romanticize industrial society, socialism saw its contradictory nature: how it gave rise to a class whose role in the productive process gave it an interest in transforming society. Socialism never thought that this class would automatically have the social and political consciousness necessary to transform society. It's exactly why the socialist movement strove to build militant organizations to awaken this consciousness. It's the Third Wave Study Group that romanticizes knowledge workers, a disparate grouping which they endow with virtues it doesn't have and couldn't have. No social layer can have these virtues just by the technical roll they play in the economy.

In order to make its point, the Third Wave Study Group not only glorifies knowledge workers, but it denigrates the industrial proletariat. Their reasoning is based on industrial society itself: industry is based on hierarchy. They say, "the authoritarian patterns of managerial hierarchy always reasserted themselves; they were imbedded in the organization of work on the factory floor. Thus these relations could not be permanently transformed while trapped inside the second-wave industrial economic base." According to them, due to this situation, not only does the proletariat reflect the past, it tends to be reactionary: "some blue collar workers fear for the future and fight to retain old ways, regardless of the consequence to society or the environment." So not surprisingly the Third Wavers show little concern over the loss of industrial jobs. "It does no good, for instance, to call for a reindustrialization of the economy along the lines of the blue-collar industry. While some industries can be retained and some jobs can be restored mainly those that were lost due to the business cycle, mismanagement, or unrestricted runaways most of those jobs or industries eliminated by advances in technology and industrial organization cannot be restored." No more surprising is their conclusion: "Traditional

Marxists who view point of production organizing as the most valid form of struggle need to rethink long held beliefs."

In fact, this is the crucial point: the Third Wave Study Group wants to discard the idea that capitalism has organized and socialized workers at the point of production to work together cooperatively and to collectively resist their exploitation, and thus has laid the basis for their running society from below, without hierarchy or bureaucracy. In doing so, the Third Wavers reject the idea that the working class has the power to bring society to a halt and also to reorganize it without a parasitic ruling class.

The Information Capitalists

Finally: The Third Wave Study Group sees a conflict among the capitalists over the old industrial past and the new technology, with the old industrial capitalists trying to defend the industries they are based on, while the new information capitalists are involved in bringing to birth new industries. Among the information capitalists themselves, some are tied to the military and are only interested in profit maximization, while others are "information capitalism with a socially responsible human face, with an eye on making its fortunes in the green industries' of the future." The Study Group sees some problems with these progressive information capitalists: "But we must not allow these factors to cover over the basic class conflict between third wave capitalists and third wave workers. For all their unique and progressive stands on certain issues, the Silicon Valley bigwigs are still notorious union busters and social reactionaries, especially when it comes to their treatment lower-skilled, female and nonwhite sectors of their labor force." Despite all this, the Study Group's policy is to find some allies among these capitalists: "These entrepreneurs may side, temporarily, with reform movements and progressives. This is the meaning of Al Gore's staking out a leading analysis on ecology, as well as John Scully of Apple Computer's sitting next to Hillary at Clinton's inaugural address."

The consequence of this analysis is clear: once more the left is urged to support a sector of the capitalists, the so-called progressive ones, who are far from perfect, but a sector that are supposed to share some of the objectives of the left. More precisely, what can a left movement do that believes an Al Gore can side with its concerns from the pinnacle of power, if not continue its self-destructive ties to the Democratic Party? So, all this so-called theory about the Third Wave and the new era of history ends up calling for support to ... politicians of the old era.

The Third Wave Study Group energetically recommends the works of Alvin and Heidi Toffler on the Third Wave as "one of the best analyses out there." When the Republicans took over Congress the Tofflers made the national news as they were invited to a conference organized by Newt Gingrich in Washington. The Tofflers have been friends with Gingrich for a couple of decades and Gingrich wrote the introduction to their latest book *Creating a New Civilization*. Gingrich calls the book "one of the seminal works of our time" and points to the Tofflers' visit to Fort Monroe to speak to the U.S. Army Training and Doctrine Command (TRADOC). Gingrich says that the use of stealth technology in the Gulf War was the result of applying their Third Wave ideas, which resulted in the annihilation of the Iraqis' use of Second Wave anti-aircraft.

The Tofflers, with a background in the communist movement, have returned repeatedly to a battle with their former ideas in presentations to various corporate clients and the Reagan White House. "For Marxists, hardware was always more important than software. The computer revolution now teaches us that the opposite is true. If anything, it is knowledge that drives the economy, not the economy that drives knowledge." Further, "The glorification of the proletariat and the theory that it was the vanguard of change, reflects the principles of a low brow economy" i.e. a low knowledge-intensive one. The

problem is not breaking the shackles on the proletariat, but freeing the service industries of the "shackles" of regulations. "Instead of decrying the rise of the service sector and continually attacking it as a source of low productivity, low wages and low performance, shouldn't it be expressly supported and expanded?" And they say, "For today the single important political conflict is no longer between rich and poor, between top-dog and underdog ethnic groups or even between capitalism and socialism.

The decisive struggle today is between those who try to prop up and preserve industrial society and those who are ready to advance beyond it." The Tofflers take the logic of the Third Wave another step forward ... towards an energetic defense of capitalism.

But the Third Wave Study Group itself is already taking this route: "In our view of socialism, we affirm the entrepreneurial spirit, the motivating energy of the market and the right of individuals to become wealthy through the private ownership of the capital they have helped to create." They sing the praises of the market: "market forces, in particular the drive for innovation and new profits, will be the major devices used to carry out economic restructuring. It should be clear by now that the market is necessary for the practical functioning of any economy." Laws and regulations will be used to steer capital investment into "areas that benefit society," like "new environmentally beneficial technologies" which "may not be taxed at all for a set period." Instead there will be taxes on companies that pollute the environment or prevent unionization. (And no doubt the taxes will fall heavily on the blue collar workers, who stick obstinately to technology.) The Third Wave Study Group pretends it wants serious reforms, and even talks about the class struggle or socialism. But clearly what they call socialism is but a new era of capitalism ... with a computer in every home.

Technological changes are occurring and having an impact on the social classes. But technological change by itself won't bring about a social transformation of society. Such a transformation can be carried out only by a social class that has an interest in the end of capitalist society, that is, the working class, including many of the knowledge workers who owe their jobs to the new technology under the condition that they join the rest of their class and don't stand apart.

Computers will be very useful in the building of this new society. Today more than forty percent of industrial workers use computers at home, work or school, and even more office workers use computers daily. A more technically skilled working class is one that can use its skills to transform society and to run it in the future. Computers can facilitate the ways the working people of the world can directly participate in making democratic decisions about production and the use of natural resources. Everyone can have access to the plans and input into them. Computer-based automation without the hindrances of capitalist control, exploitation and national borders can free workers from all types of drudgery and unnecessary labor, establish true leisure and abundance, and the material possibilities of a decent life for everyone on earth.

We revolutionary communists see the tremendous potential in computers. But we also see that this potential can't be realized unless there is a socialist revolution to overthrow capitalism and the proletariat takes power. May 21, 1995

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