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## Introducing cy.Rev

There's an important revolution going on in the world today. It's being driven by new developments in information technology and the far-reaching economic changes they have caused. Digitalized knowledge has now become the major component in the production of new wealth. The information society is supplanting industrial society as surely as industrial society replaced agrarian society.

The depth of these changes, however, has been largely ignored by much of the left community. At best, most consider them as "secondary aspect" to more traditional notions of class struggle and capitalist crisis, rather than as a new tidal wave sweeping through history. At worst, those who focus on the information revolution are dismissed as "technological determinists" or elitists of one variety or another.

We want to change this situation. We think the time has come to create a self-conscious current within the broader progressive movement that grasps the decisive importance of the information revolution. We want to help facilitate an ongoing investigation and debate into the impact of that revolution on the prospects for both capitalism and socialism. In addition, we want to put that discussion into the center of the debate on the left's agenda.

Our basic analysis stresses the revolutionary change in the means of production in which information technologies are the driving force behind the creation of new value in society. The changes here are having a dramatic impact on both the relations of production and the nature of work. There are new social divisions being created along with a realignment of classes and strata around many critical issues. The ground for organizing the class struggle is shifting; there are new dangers of prolonged joblessness, repression, chauvinism and war. But there are also new opportunities creating new possibilities for a democratic and ecologically sustainable socialism. These require new approaches to strategy, tactics and methods of work and organization.

We propose cy.Rev as one forum for this discussion and as a tool to help organize this current of thought. We would like to publish 4 or 6 times a year, primarily as an electronic 'zine, available for downloading or on disk, with a limited hard copy production primarily for bookstores. We will make one version of the 'zine in plain ASCII and another formatted for laser printing. Since what we will be able to do depends largely on your response, we are launching the journal without a hard schedule for future issues right away.

We want to expand our editorial board as soon as possible. We need quickly to grow far beyond our initiating group in Chicago, both across the U.S. and around the world. If you want to nominate yourself or recommend someone else, please contact us. Our criteria for board membership are two: general agreement with our political perspective and willingness to contribute time and energy to the project. This means finding, writing, reviewing and editing articles, as well as raising money and increasing circulation.

We are excited about cy.Rev's prospects and the challenge of building a new political trend. We hope you join us.

# The Cybernetic Revolution and the Crisis of Capitalism

By Jerry Harris and Carl Davidson  
The Chicago Third Wave Study Group

In the early 1970s U.S. capitalism began to suffer a deepening crisis of accumulation. This crisis sprang from the very heart of the modern industrial system, arising out of fundamental contradictions in its exploitation of labor and its conditions of production. But this crisis also occurred along side a postmodern revolution in microelectronics and computer technologies, creating significant changes in the forms of accumulation and wealth creation. The two dynamics have created a new historic juncture for rethinking established theories of political and social change.

Marxist economists such as Paul Sweezy have long tracked the crisis of accumulation. Recently key extensions have been added by eco-Marxist James O'Connor. But radicals also need to take note of the important contributions of Alvin and Heidi Toffler and their three waves theory. The Tofflers describe agricultural society as the first wave and industrial society as the second wave. They have added new insights into the nature of changes in the economic base where knowledge has become the most important tool of production. This became possible because of the revolution in the means of production, or information technologies. Toffler calls this information society the third wave, or what we'll call information capitalism.

For about 200 years "second-wave" industrial capitalism was generally expanding and dynamic. Although punctuated by cycles of economic crisis, it grew into imperialism and built a world market. In the metropolitan countries, the circle of wealth grew wider, as a substantial number of workers organized unions and attained "middle class" living standards. But in the early 1970s industrial capitalism hit new limitations to its growth. The crisis was all sided, including both labor and nature. In a frantic race to maintain profits, the system began to toss huge numbers of people into the wastelands of unemployment and insecurity.

In itself this is nothing new. Capitalism has always contained the contradiction between expanding profits and lowering the cost of labor. Each business is driven to maximize its accumulation of capital in order to survive and grow on a field of ruthless competition. In order to do so, the pressure to reduce wages and benefits is constant. But this time, the downturn was not followed cyclically by a "boom" or recovery that could be measured in higher wages or new job creation for those who had endured the "bust" period.

## POST WAR EXPANSION

While every periodic crisis has roots internal to the nature of capitalism, each crisis also has an historic context. At the end of WWII a number of factors came together, which gave renewed life to capitalism, particularly in America. There were four basic factors that gave rise to a tremendous expansion of the U.S. economy and industrial base:

- First and most important was a period of vastly reduced competition from foreign rivals. The post-1945 world was America's market because the industries of Europe and Japan had been destroyed by the war. In such circumstances U.S. capitalism quickly grew with an expanded job base.

- The second factor was a tremendous demand for both consumer goods and basic industrial equipment and plants. There was a 15-year pent-up demand for homes, cars, refrigerators, and much more as a result of the depression and war. The organization of basic industry by the CIO leads to a large-scale post war labor offensive which won significant gains in wages and benefits. This set the social conditions for accumulation, laying the foundation for the post-war boom, the creation of the suburbs and the growth of the blue collar "middle class."
- Third, alongside the demand for consumer goods, went the intensified demand for capital goods--the need for new factories and heavy equipment, not only in America but also throughout Europe and Japan. This meant further expansion and the profitability that allowed the liberal social contract with key sectors of unionized labor.
- Fourth and last was the development of new technologies, which produced large-scale industries and jobs. Jet airplanes, electronics, and the chemical industries surged forward with resulting spin-off economic activity spreading throughout society.

These strengths also increased the power of international financial institutions. The Breton Woods agreement set the gold standard to the U.S. dollar, which then became the sole international currency. And the International Monetary Fund and World Bank were established as arms of U.S. finance capital.

A vital part of this growth was the state's expanded role in reproducing the conditions of production. O'Connor defines this as the second contradiction of capitalism. He describes it as "everything is treated as if it is a commodity even though it is not produced as a commodity with the law of value, or law of markets". (The Second Contradiction of Capitalism: Causes and Consequences, page 1) This includes land and nature, urban space and labor power itself in the form of the next generation of workers.

It became the state's role to assume the cost and regulation of these conditions through policies on education, health care, welfare, transport, zoning, water, air, forest and many other examples. The Great Depression made this possible when the New Deal redefined the role of the state as an important and direct economic player. To help save capitalism from its own cyclical crises of overprotection, the state began to regulate more and more aspects of the market, and assume greater cost in maintaining the economy. This was particularly important in the postwar recovery period.

All these factors gave new life to industrial capitalism, and the ensuing economic boom lasted about 25 years. But the underlying contradiction of overprotection reasserted itself. Living standards could not keep pace with production. The tensions between wages and profits emerged in full force creating permanent economic stagnation.

Alongside this first contradiction is the second--increasing the scope of reproduction while decreasing the ability of society to bear the cost. Industrial capitalism needs to grow. Not only is it pushed on by its need to accumulate; its nature is that of an expanding mass society. Mass production, mass markets, and mass consumption are all part of industrial civilization. It therefore needs more space, more materials, more energy, and more labor. It needs to expand its use of the conditions of production, and "externalize" their cost. This not only led to the crisis in nature, but also in our cities and infrastructure.

## STRUCTURAL CRISIS OF INDUSTRIAL CAPITALISM

This crisis began with the reintroduction of fierce competition from Europe and Japan. Nixon was forced to recognize this when he ended the Breton Woods agreement in 1971 and the dollar had to compete with other currencies. By 1973 U.S. profitability had fallen to 9.5% compared to 16.5% in 1952. (N.Y. Times, March 28, 1983). This renewed competition meant the liberal social contract between labor and capital was at an end. American living standards peaked in 1973, and have been on a steady decline ever since. In what was now a more competitive world, the struggle for accumulation become fiercer, driving down the wages and benefits of workers.

This crisis hit full force in the 1980s when unions were forced into contract concessions resulting in billions of dollars in givebacks throughout the economy. While this helped profits, it meant less money for consumption. The results have been staggering. U.S. income has dropped from number one in the world to number ten. Real weekly earnings are 19% below 1973 levels, while the median income of families headed by those under the age of 30 has fallen 32%. Over 20% of our children live in poverty. Since 1988 the average net worth of American households has fallen 12%, or about \$5,000 per family. These figures also expose the racist nature of the U.S. economy: median white households are worth \$44,408; Latino households \$5,345; and Black households \$4,604. (Chicago Tribune, January 1994). Its no wonder that American factories are shutting down, they simply can't sell to a population making less real income than the generation before it.

Capital flight has been a major tool to reassert profitability. The continuing pressure to lower wages and other costs has meant shutdowns and layoffs here combined with greater penetration into the Third World. Corporations make use of a global labor market where wages often average \$4 a day. Why pay Detroit autoworkers \$12 an hour, when Ford can pay 75 cents an hour in Jalisco, Mexico? NAFTA is only the latest result of this trend.

These drastic drops in working-class income were also accompanied by the large Reagan cuts in welfare and urban spending. Just as corporations attacked workers to lower the cost of their first contradiction, the state cut spending to lower cost in the second contradiction. As individual capitalists "externalized" or dumped more of their potential costs, such as pollution, on the public, they also weakened the overall health of capitalist society. Government debt, the tax crisis, urban decay and violence are all reflections of the crisis in the conditions of production. As profits become weaker in the private sector, the corporations attack the wage structure and force the state to assume more of their costs. In turn the state finds itself deeper in debt and crisis, and must cut costs by attacking its social programs, selling off its forests, letting the infrastructure decay, etc.

O'Connor sums it up well in his essay "Socialism and Ecology": "The vitality of Western capitalism since World War II has been based on the massive externalization of social and ecological costs of production. Since the slowdown of world economic growth in the mid-1970s the concerns of both socialism and ecology have become more pressing than ever before in history. The accumulation of global capital through the modern crisis has produced even more devastating effects not only on wealth and income distribution, norms of social justice, and treatment of minorities, but also on nature or the environment. Socially the crisis has lead to more wrenching poverty and violence, rising misery in all parts of the world, especially the South, and, environmentally, to toxicification of whole regions, the production of drought, the thinning of the ozone layer, the greenhouse effect, and the withering away of rain forests and wildlife."

Industrial capitalism, structured to build and feed a mass market, has thus reached new limits of growth. On one hand, it must maintain its profitability and increase its accumulation. On the other

hand, it can no longer afford the unrestricted expansion of mass consumption, especially its "externalities." The new limits are both economic and ecological. Thus the present structural crisis is all sided and deep.

## **THE CRISIS AND INFORMATION CAPITALISM**

Coinciding with the crisis of accumulation, however, was a revolutionary development in the means of production. Advances in computer, microelectronics and telecommunications technologies have brought major changes to the basic character of industrial capitalism. The application of knowledge is now the primary means of new value production. Of course, all labor has always contained two parts--the knowledge of how to produce something and the physical effort necessary to make it. In first wave society, physical labor encompassed the vast majority of work, whether it took the form of growing corn, weaving wool or maintaining feudal manors.

In second-wave industrial society, however, machine technology and manufacturing increased productivity by a factor of 100. The knowledge of building a lathe or steam engine reduced the proportion of input of physical labor. But still the factory system relied mainly on physical labor and large scale material assets and inputs to produce value.

But in third wave societies, the application of microelectronics technology has already increased computer productivity by one million. 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. Physical labor and industrial machinery are now secondary to the value added by information. This has had a dramatic impact on both finance and manufacturing, as is allowing capitalism to develop along new lines.

The application of new information technology has meant that industry can produce more with fewer resources, less energy and less labor. Plastics have replaced metals, fiber has replaced copper, and chips are made of sand and clay. In fact computer technology consists almost entirely of intellectual capital, with raw materials costing only 1% and unskilled labor 5%.

By 1988 the U.S. required only 40% of its blue-collar labor force to produce the amount of manufactured goods equal to that produced in 1977. From 1967 to 1988, weight per dollar value had fallen by 43%. By 1985 Japan had increased its output two and half times with just the same consumption of raw materials and energy as in 1965. Cars used to contain 1600 pounds of steel; much of that weight is now replaced with plastics. Thus the application of intellectual capital--in this case in the form of design--has meant the drastic reduction of both physical capital and the labor force.

But the restructuring goes even further. Because the speed of processing information has increased, on-time warehousing, niche marketing, and the elimination of middle management have become possible. Second wave Industrial society produced mass products in huge factories with a giant labor force. This necessitated a huge number of middle managers to count production, oversee workers and move information along the command hierarchy. Now the rapid acquisition and deployment of information is the primary goal of management and corporations have restructured to insure its movement. With expanded information technology and cuts in employees, middle managers are a disappearing breed.

Timely information--which has led to shorter product runs, lower supplies, and niche marketing--also means rapid change and innovation. In essence the "creative destruction" of capital has been speeded-

up. Its reflection in the labor force means more part-timers and more temporary workers. The most rapidly growing job category is contingent labor, forming 60% of all new jobs in 1993. This has increased the downward pressure on wages further. Even during the "jobless" economic recovery of 1993, while profits made a healthy recovery, the median hourly wages for males fell another 2.7%,

New technologies, corporate flight, and wage cutbacks have laid the basis for renewed accumulation, even in manufacturing. But this restructuring has increased poverty and class contradictions throughout society. The urban crisis, greater economic insecurity and political instability are spreading in ever widening circles. Like Catch 22, the system resolves one crisis only to create another with similar features.

### **THIRD WAVE FINANCE CAPITAL**

The impact of information technologies on finance capital has been as dramatic as its effects on manufacturing. Telecommunications have established a global electronic marketplace, which functions in real time. The most important change has been a tremendous increase in unregulated, highly mobile speculative capital. This global infrastructure with geosynchronous satellites was created just as industrial capitalism was facing its crisis of accumulation. This allowed information finance capital to create a huge pool of wealth without creating anything for social use or consumption. While industrial capital had reached its limits of growth, speculative capital used the new technologies to expand and attract trillions of new dollars. In fact, the world trade in currency is 40 to 50 times larger than the world trade in goods. Worldwide the money market accounts for \$500 billion a day, two trillion a year just from New York firms.

Third wave technologies have thus been used to develop a global bourgeoisie. While finance capital has been dominant since the advent of imperialism, the national formation of this capital is now less meaningful. While still seeking to dominate its "own" state, today information finance capital, independently constituted with multinational currency, seeks autonomy above and beyond the restriction or regulation of any state, anywhere.

Walter Wriston, past chairman of Citicorp and spokesman for information capital, has articulated this view in his book *The Twilight of Sovereignty*. He notes that today no currency is tied to physical commodities or any central bank, but instead is comprised as information on the global telecommunications infrastructure. He elaborates: "Money is asserting its control over (government), disciplining irresponsible policies and taking away free lunches everywhere" (page 66). International traders take "a vote on the soundness of each country's fiscal and monetary policies" (page 67) and this "giant vote-counting machine conducts a running tally on what the world thinks of a government's diplomatic, fiscal and monetary policies and this opinion is immediately reflected in the value the market places on a country's currency." (page 9).

Wriston clearly thinks this is a revolutionary development in freedom and democracy for this class. He goes on to state that "capital goes where it is wanted and stays where it is treated well" (page 61), noting that the "ability to move capital...is fundamental to the continuous efforts of mankind to live a better life." (page 72) This is free market ideology taken to its fullest and most abstract development. The unhindered movement of money becomes the highest form of freedom, and the ability of global financiers to decide the fate of governments and countries the fullest expression of democracy--all made possible by the electronic infrastructure and those with the access and knowledge to use it.

In this sense one could argue that Ronald Reagan was our first third wave president. Reagan's policies clearly favored the rapid development of speculative capital. His appointment of Paul Volker

at the Federal Reserve lead to increased interest rates helping to move capital out of manufacturing and into the new global financial infrastructure. These policies helped create 20% profits in finance markets, while pushing manufacturing profits down to 10%. This sped the rush to deindustrialization as money fled to the market of highest returns. Reagan's unconcern for America's trade deficit, and his insistence on deregulation of the market is better understood as an early variant of third wave financial strategy.

Information capitalism has also used third wave technologies to internationalize production even further. Transnational corporations have created global manufacturing and marketing alliances where the trade in products is now replaced by value added activities. A product may easily have a dozen parts built in different countries through an alliance of interlocking global corporations.

Wriston calls a national trade balance an "artifact of a bygone age". (page 87) As he shows: "The popular IBM PS/2 Model 30-286 contains a microprocessor from Malaysia, oscillators from either France or Singapore; disk controller logic array, diskette controller, ROM and video graphics array from Japan; VLSO circuits and video digital-to-analog converter from Korea; and Dram from Singapore, Japan, or Korea --and all this is put together in Florida...Since there are thousands of such products put together in similar ways, the old concept of trading one item for another is obsolete." (page 81) Wriston maintains that the driving force behind the growing interlock of transnational is the need to access intellectual capital.

### **Bladerunner VS Ecotopia**

Third wave capitalists are already divided between two wings. Both agree that education and the expansion of knowledge is the key to a strong and competitive society. An information capitalist like Wriston even describes knowledge workers as the "new bourgeoisie", noting that "If Marx were alive...he would call education the means of production". (page 108).

One wing, however, carries over the "maximize-profit-in-the-short-run" values of the second wave, and applies them to both electronic and traditional forms of capital. While unabashedly seizing every public subsidy it can for itself, it takes an anti-government, "free market" stance generally. They are fond of quoting Milton Friedman, who emphasizes that the technological revolution "makes it possible to produce a product anywhere, using resources from anywhere, by a company located anywhere, to be sold anywhere."(Fortune 3-8-93) Its vision is of an unrestrained and unfettered capital, free to roam the globe at will and exploit an ever changing sea of opportunity, all made possible by the instantaneous flow of information.

The other wing emphasizes creating of new value on a sustainable basis over the unrestrained making of money. It sees itself as information capitalism with a socially responsible human face, with an eye on making its fortunes in the "green industries" of the future. Its current main political representative is Vice President Al Gore, who writes on ecologically sound economics and calls for universal access to the electronic infrastructure. On the business side, elder management guru Peter Drucker defines America as a "post-capitalist" society where the main "social challenge is to preserve the income and dignity of service workers who lack the ability to become knowledge workers and to prevent class conflict". (CSM, August 26, 93). Part of their view is to see a constructive role for an activist government that promotes the dynamism of the market while trying to restrain its ecological and social destructiveness.



## THIRD WAVE AND THIRD WORLD

Both the crisis and new technologies have meant deeper penetration into Third World economies. Cheap labor and new markets are seen as solutions for the accumulation crisis. Information technologies have built a "global workshop" complete with a global labor force where, as Wriston and Friedman have pointed out, capital goes where it wants to build anything it desires. In fact, between 1980 and 1990, foreign investment by the world's biggest corporations grew from \$560 billion to \$1.6 trillion. (U.S. News & World Report, Jan. 24, 1994).

The effects on the Third World have been tremendous. First, we can now see many newly industrializing countries accelerating their transition from rural first wave societies into the second wave. This has meant a new division within the Third World between countries still mainly with agricultural economies, and those with an urban industrial base. Some Third World Marxists like Samir Amin now use the term Fourth World to denote these poor, first wave agricultural societies.

Second, the transition to second wave industrialism is often creating ecological havoc, just as it did in the northern hemisphere in the last century. But today, the capitalism of the North also uses the South as a dumping ground for exporting the ecological costs of its "second contradiction." One of the starkest pieces of evidence of this was an internal memo written by the World Bank's chief economist, Lawrence Summers. He stated: "I think the economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable...because foregone earnings from increased morbidity" are low. He adds that "the under populated countries in Africa are vastly under polluted; their air quality is probably vastly inefficiently low compared to Los Angeles...." (The Economist, Feb. 8, 1992). These rather cold-blooded economic calculations expose a global system of ecological destruction where national borders are viewed only as a footnote to the capitalist market.

Finally, within some rapidly developing third world countries, a small but dynamic third wave sector is developing simultaneously with the second wave. India, for instance, has a growing pool of talented--and relatively inexpensive--computer programmers ready to work for any employer reachable by modem or Federal Express.

The second wave changes are most obvious. Among the top 20 manufacturing exporters in the world are Hong Kong, South Korea, Brazil, and Singapore. Countries like Mexico, Argentina, South Africa, and Iraq have decisively entered the industrial era. Others like China and India still have a majority of the population tied to the land, but have developed advanced zones in their huge urban centers.

These changes are causing tremendous social upheavals and stress as class structures are transformed. Not only is finance capital highly mobile, but also industrial capital. This capacity to rapidly shift production has provided continual escape from unionization, where subcontractors establish sweatshops in newly industrialized rural areas. It has also brought millions of women into the Third World workforce in the most low-paid and insecure jobs. The growth of temporary and contingent labor is thus a worldwide trend.

Capital mobility also reinforces political authoritarianism. Writing on the Philippines Jane Margold points out..."As a speeded-up flow of capital, information, goods and services circulates transnationally, foreign investors are well-positioned to manipulate the Philippines state's fears of long term economic marginalization....A rationale is then produced for the deployment of military, police and thugs to discipline striking workers..." (p. 8 Philippine Labor Alert, Sept-Dec. 1993). Certainly this is a pattern found throughout the Third World.

This mobility is transforming key aspects of imperialism. Where territorial and resource control were of major importance in past decades, they are less so today. The method of international capital laying roots deep into a colonial society, and dominating through a permanent financial occupation, is changing. Today the control of the overall global market is more important than national economies. Local labor markets are used and abandoned in a rapidly changing sea of opportunity and competition. With important exceptions like Mexico's relationship to the U.S. via NAFTA, the long term exploitation of any one country or bloc of countries is not the main strategy of imperialism. Again, as Wriston points out, capital goes where it wants and stays where its treated well. Its no accident that he titled his book, "The Twilight of Sovereignty". The export of capital is still the key aspect of imperialism, but capital mobility and the threat of denying capital is taking precedence over long-term occupation as a means of control.

This changing face of imperialism and its impact on Third World societies is also the basis for new strategies and divisions within the left. In first wave countries the traditional Maoist strategy of peasant based guerrilla warfare still retains considerable validity; throughout the 1970s and 1980s, it even saw various degrees of continued success in El Salvador, Namibia, Nicaragua, and Kampuchea.

But in many newly industrial countries, labor struggles; electoral parties, and community based organizing for local economic growth have become the new focus. This is clearly seen in the experiences of the Workers Party of Brazil, the mass urban struggles in South Africa, the labor upheavals and democracy struggle of South Korea, and in the Party of Revolutionary Democracy in Mexico. Even with the heroic peasant uprising in Chiapas, which has electrified the Mexican left, no one expects Mexico City to be surrounded and taken by a peasant army. Traditional industrial Marxism still finds a firm home in most of these societies, although new concepts on the key importance of democracy; technology and the market play a vital role.

For those countries caught in the middle of transformation the road for revolutionary change has been very difficult. Countries like Colombia and the Philippines have rapidly growing urban industrial sectors, but both have powerful guerrilla armies still well organized in the countryside. They also have strongly developing urban movements and democratic openings not present just a decade past. This has been a basis for debates and splits in both countries

In a recent interview ex-commander of Colombia's M-19, Navarro Wolff, explained..."Our original idea was that the people would take up arms and head to the mountains...But two things had changed in Colombia...we discovered that Colombia is a much more urban country than we had originally believed. And the country began to open up politically, which for us came as a great surprise." (NACLA, Jan\Feb 1994)

The importance of urban-centered resistance has also been raised in the Communist Party of the Philippines. Ever since the Manila based overthrow of Marcos and resulting democratic openings, there has been debate over the balance and pace of rural and urban struggles. As always the issues are many sided and complex, but part of the debate has been over the role of urban insurrection and its relationship to peasant based guerrilla war. Recently there has been an organizational split in which Chairman Sison still holds to a revolutionary strategy situated mainly in the countryside.

## **CHANGING POLITICAL STRATEGIES**

The tremendous changes in the economic base and resulting shifts in populations and work relations have laid the basis for new political alignments. These tensions are not just present in the Third

World, but also societies moving from second wave to third wave economies. The result has been new challenges for Marxism and radical theory.

In America there are two growing class strata that need close attention. These are the new knowledge workers and the rapidly expanding contingent labor force. Contingent labor includes part-time and temporary workers and home workers. Today temp agencies are the largest employers in the U.S. This sector, while holding some highly skilled workers, mainly consists of low paid, low skilled labor. Knowledge workers are on the other end of the third wave revolution; they are generally highly paid and in demand. Technical occupations and professionals will be the largest job category by year 2000, representing close to 20% of the labor force. (Tribune, 11-7-93) But even among knowledge workers, there exists rapid turnover and layoffs.

Contingent workers, as the most abused sector of labor, contain the potential for a militant anticapitalist movement. But new methods of organizing, different from traditional trade unions, need to be created to match the ways contingent workers experience their oppression. These will include combining community-based organizing with workplace organizing. Social demands like guaranteed annual income, lifelong education, and universal health care need to be combined with the traditional economic demands of the union contract.

Knowledge workers today are in the position of the old industrial proletariat. They are key to the enhanced production of surplus value. Just as blue-collar workers contained two sides--the conservative labor aristocracy as well as the most progressive sector of labor supportive of democracy and socialism--knowledge workers will be divided into two as well. One sector will form the social base for the defense of information capitalism regardless of its excesses. Others will deeply understand the potential the new technology has for creating and sustaining a new social order. This progressive side also is born from the conditions of its own labor, which are enmeshed in the most advanced forms of capital.

This was Marx's argument for the importance of the industrial proletariat. Not just that they were exploited, but they were organized in the most modern and important section of capital. Therefore they encompassed the most advanced forms of political and economic organization. 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. This lays the basis for socialist norms of labor, and blurs the lines between mental and manual work, which is the historic division between management and employee. The political voice of these strata has already emerged in today's battles for democratic use and control of information technologies.

Lastly the new social movements need to be understood in their relationship to the crisis in the conditions of production. The movement of feminists, ecologists, and community-based organizations correspond to the reproduction of labor power, the exploitation of nature, and the pressure on urban space. Just as the labor movement was born from the first contradiction of capitalism, these struggles arise from the second contradiction.

The feminist concerns over the control of a women's body, health care, child care; the struggle of young people for education and culture; the green movement's battles against pollution, global warming and deforestation; community struggles over housing, industrial location, and drugs; all reflect the cost of capital externalization and a tightening circle of available resources. Since the state controls and regulates the conditions of production, the focus of these struggles is with local, state and federal government. Traditional Marxists who view point of production organizing as the most

valid form of struggle need to rethink long held beliefs. The immediate struggle against capital grows from both economic and social grounds.

## **CONCLUSION**

As Marx pointed out long ago: "Modern Industry never looks upon and treats the existing form of process as final. The technical basis of that industry is therefore revolutionary, while all earlier modes of production were essentially conservative. By means of machinery, chemical processes and other methods, it is continually causing changes not only in the technical basis of production, but also in the functions of the laborer, and in the social combinations of the labor process. At the same time, it thereby also revolutionizes the division of labor within the society, and incessantly launches masses of people from one branch of production to another." (Capital, 1954, p. 457)

The same transformative process goes on today. A revolution in information technologies is creating fundamental changes in how and where people work. It is changing the functions of the laborer, the social combinations of the labor process, and has launched masses of people from one branch of production to another. Does this not accurately describe the world around us? Yes, the traditional crisis of accumulation has reemerged in full force, but the context and form of these changes has been the 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. Our task is to understand the general crisis, its new forms, and begin to develop new strategies for appropriate technologies, radical democracy and sustainable socialism.

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# **Information Empowerment and Democracy in the 21st Century**

*A Speech Given at the Freedom of Information Day Forum at the Chicago Public Library  
March 16, 1994*

By Abdul Alkalimat  
21st Century Books

This forum is more important than most people think. We are discussing the infrastructure of the future, the basis on which our social lives will be organized. A major aspect of the crisis we face is whether most major public policy decisions about the new technology will be made before the actual public can get involved, especially the impoverished and economically insecure majority. So let me begin by expressing appreciation to the Chicago Public Library and the Coalition for Information Access for co-sponsoring this discussion.

I work in a bookstore-publishing organization that is located at 607 E. Muddy Waters Drive; formerly known as 43rd St. This is a neighborhood rich in cultural history. Our store is in the last location used by Theresa Needham for her world famous blues club called Theresa's for nearly 50 years, and we're just a block or so from the Checkerboard Blues Club, still a vibrant authentic paragon of blues culture. On the other hand this area of Grand Blvd. is one of the poorest areas in Chicago, with rates among the highest in the city for unemployment, low income, homelessness, TB, AIDS, and every other statistic of social crisis. We've got Martin Luther King High School, with its basketball team ranked #1 in the USA (until last week!), but with an overall attendance and academic record on the other end of the spectrum. I come here to discuss the information revolution from this context.

The people in my neighborhood came to Chicago to work in the factories and the stockyards. The jobs were good and provided an immediate upgrade in the quality of life one had in Mississippi or Arkansas. They were forced to come because the invention of the mechanical cotton picker abruptly ended any need for unskilled field labor.

Now these people are being kicked out of the factories, this time by the computer and robotic technology. We are in the midst of a revolution that is transforming the entire world. A revolution in technology is rapidly spreading to every industry, from shipping docks to steel mills to fast food dispensaries creating production and service without human labor. The future is fast being defined as a worker-less society.

We are faced with a crisis, but it is useful to remember that in the Chinese written language, the character for crisis is represented by two characters, one meaning danger and the other opportunity. The danger is that this new technology is rapidly increasing productivity while conversely decreasing the need for human labor. On this basis the society is polarizing along economic lines, with a rapid increase in billionaires (since the Reagan and Bush years there are now over one million millionaires in the USA), and with the richest 1% with as much wealth as the bottom 90%.

On the other hand there are 75 million people in the USA in poverty, over 7 million homeless, and 20% of those who work 40 hours a week have incomes below the poverty line. At some point we have to make a healthy and happy population the first and main priority before we invest our resources into high tech tools that presuppose such social conditions, but our society continues to head in the opposite direction toward what must be called barbaric.

On the other hand, these conditions are so dangerous that we sometimes forget the great opportunities based on this same technology. After all, the social upper class hardly works, at least not as beasts of burden. There are great possibilities to occupy our time based on the nurturing of human life, from prenatal care to child rearing to lifelong learning to serving the elderly. There is the full potential of human civilization and culture, both developing the skills to produce it better and on higher levels, and cultivating the tastes to explore the diversity of global cultural consumption. Everyone should have the necessary economic security required for the freedom to become truly human, to improve the quality of their lives based on this new technology. In sum, this forum is about facing up to the dangers of this new world we're entering, and taking a stand for democracy and human liberation.

The key is the so-called information highway, by which computer technology moves to center stage as the essential tool for producing and cultivating human consciousness. This has already replaced the printing technology that started with Gutenberg in the 15th century. Further, it will transform the telephone and television, as we know them. The most general starting point is the fight for universal access to the information superhighway. There are at least five aspects of access: 1. access to hardware: there are few computers in poor communities; 2. access to software; 3. access to training; 4. access or entry points to the highway; and 5. access to the financial resources to not only get on but to stay on the highway. These are critical issues, but they are not my main points of emphasis.

Many enlightened forces that understand the relationship between information and democracy are leading the overall discussion of access. In fact, everybody agrees with access they just mean different things by it. What we need, and what is more inclusive, is "information empowerment."

For example, people have access to voting, but half of the US electorate doesn't because they have been functionally disenfranchised. (yesterday in Illinois, 7 in 10 registered voters did not vote, and only 45% of those eligible had registered, so democracy was carried out by only 16% of the potential vote!) The electoral democracy we have in the US is dominated by great wealth, so it is rare to have a peoples candidate like Harold Washington break through, and as you remember the promise of empowerment in that 1983 Chicago mayoral race led to unprecedented levels of voter registration and voter turnout. We need to think in terms of empowerment because as with Harold Washington it means change, it transformation, it means a step toward freedom in fact, and not just in possibility.

Information empowerment begins with access, but goes further in the following ways: 1 empowerment means that there are data bases designed to answer the questions being raised by people in poverty and people fighting forms of exploitation and oppression; 2. empowerment means that we have enough grass roots people online engaging in conferences for the sharing of experiences and forging the levels of consensus necessary for informed united civic action; 3. empowerment means grass roots groups utilizing the technology to engage in publishing newsletters at the grass roots level with the required technical skill to take advantage of the data bases and graphics available on the highway; 4. empowerment means that education is transformed based on a new formula: every student has a computer, every school has computer labs, every class room is smart, and every teacher gets summer and weekend workshops to keep up (we need to go way past the innovations that followed the Soviet Sputnik crisis of 1957) empowerment means a new kind of library system by which the library is a technical service institution guiding people to information, training them, sending organizers out to transform the community into an electronically smart space of human habitation, and, as it has been, a repository of hard copy.

Overall, information empowerment is not a technical matter, but a matter of politics, of morality, of action. Not only do we have to make this superhighway free, we have to change the society in which it operates so it's possible to have information empowerment.

However, the likelihood is that we're going to get an information railroad and not an information highway. The railroad was the major 19th century transportation breakthrough of industrialization in the USA. It was made possible by the federal ~government giving millions of acres of public land free to private corporations to build railroads (from 1862-72 Congress gave away 100 million acres!), and then allowed them to charge the public fees to ride or ship freight. At a latter stage, based on automobile technology, the government built and continues to maintain the highways we are all free to enter. If the information revolution is a highway we should all be able to get on free, but since we are being expected to pay a fee its a railroad and not a highway.

Let's make this forum a beginning in our fight for a truly free and universal information highway. And more, we need to fight for free and just society. Our options are still open, so we must act now. Toward this end, we need to have forums like this in all of our local communities as soon as possible.

# The Economy of Ideas: Rethinking Property in the Digital Age

By John Perry Barlow  
Electronic Frontier Foundation

How much do we really know about information and its natural behaviors?

Of course, information is, by nature, intangible and hard to define. Like other such deep phenomena as light or matter, it is a natural host to paradox. It is most helpful to understand light as being both a particle and a wave, an understanding of information may emerge in the abstract congruence of its several different properties...

Freed of its containers, information is obviously not a thing. In fact, it is something that happens in the field of interaction between minds or objects or other pieces of information.

Gregory Bateson, expanding on the information theory of Claude Shannon, said, "Information is a difference which makes a difference." Thus, information only really exists in the Delta. The making of that difference is an activity within a relationship. Information is an action, which occupies time rather than a state of being which occupies physical space, as is the case with hard goods. It is the pitch, not the baseball, the dance, not the dancer.

Even when it has been encapsulated in some static form like a book or a hard disk, information is still something that happens to you as you mentally decompress it from its storage code. But, whether it's running at gigabits per second or words per minute, the actual decoding is a process that must be performed by and upon a mind, a process that must take place in time.

There was a cartoon in the Bulletin of Atomic Scientists a few years ago that illustrated this point beautifully. In the drawing, a holdup man trains his gun on the sort of bespectacled fellow you'd figure might have a lot of information stored in his head. "Quick," orders the bandit, "give me all your ideas."

## Information Has to Move

Sharks are said to die of suffocation if they stop swimming, and the same is nearly true of information. Information that isn't moving ceases to exist as anything but potential...at least until it is allowed to move again. For this reason, the practice of information hoarding, common in bureaucracies, is an especially wrong-headed artifact of physically based value systems.

The way in which information spreads is also very different from the distribution of physical goods. It moves more like something from nature than from a factory. It can concatenate like falling dominos or grow in the usual fractal lattice, like frost spreading on a window, but it cannot be shipped around like widgets, except to the extent that it can be contained in them. It doesn't simply move on; it leaves a trail everywhere it's been.

The central economic distinction between information and physical property is that information can be transferred without leaving the possession of the original owner. If I sell you my horse, I can't ride him after that. If I sell you what I know, we both know it....



## **Information Is Perishable**

With the exception of the rare classic, most information is like farm produce. Its quality degrades rapidly both over time and in distance from the source of production. But even here, value is highly subjective and conditional. Yesterday's papers are quite valuable to the historian. In fact, the older they are, the more valuable they become. On the other hand, a commodities broker might consider news of an event that occurred more than an hour ago to have lost any relevance....

Understanding is a critical element increasingly overlooked in the effort to turn information into a commodity. Data may be any set of facts, useful or not, intelligible or inscrutable, germane or irrelevant. Computers can crank out new data all night long without human help, and the results may be offered for sale as information. They may or may not actually be so. Only a human being can recognize the meaning that separates information from data.

In fact, information, in the economic sense of the word, consists of data, which have been passed through a particular human mind and found meaningful within that mental context. One fella's information is all just data to someone else. If you're an anthropologist, my detailed charts of Tasaday kinship patterns might be critical information to you. If you're a banker from Hong Kong, they might barely seem to be data.

## **Familiarity Has More Value than Scarcity**

With physical goods, there is a direct correlation between scarcity and value. Gold is more valuable than wheat, even though you can't eat it. While this is not always the case, the situation with information is often precisely the reverse. Most soft goods increase in value as they become more common. Familiarity is an important asset in the world of information. It may often be true that the best way to raise demand for your product is to give it away.

While this has not always worked with shareware, it could be argued that there is a connection between the extent to which commercial software is pirated and the amount, which gets sold. Broadly pirated software, such as Lotus 1-2-3 or WordPerfect, becomes a standard and benefits from Law of Increasing Returns based on familiarity.

In regard to my own soft product, rock 'n' roll songs, there is no question that the band I write them for, the Grateful Dead, has increased its popularity enormously by giving them away. We have been letting people tape our concerts since the early seventies, but instead of reducing the demand for our product, we are now the largest concert draw in America, a fact that is at least in part attributable to the popularity generated by those tapes.

True, I don't get any royalties on the millions of copies of my songs which have been extracted from concerts, but I see no reason to complain. The fact is, no one but the Grateful Dead can perform a Grateful Dead song, so if you want the experience and not its thin projection, you have to buy a ticket from us. In other words, our intellectual property protection derives from our being the only real-time source of it.

## **Exclusivity Has Value**

The problem with a model that turns the physical scarcity/value ratio on its head is that sometimes the value of information is very much based on its scarcity. Exclusive possession of certain facts makes

them more useful. If everyone knows about conditions, which might drive a stock price up, the information is valueless.

But again, the critical factor is usually time. It doesn't matter if this kind of information eventually becomes ubiquitous. What matters is being among the first who possess it and act on it. While potent secrets usually don't stay secret, they may remain so long enough to advance the cause of their original holders.

In a world of floating realities and contradictory maps, rewards will accrue to those commentators whose maps seem to fit their territory snugly, based on their ability to yield predictable results for those who use them.

In aesthetic information, whether poetry or rock 'n' roll, people are willing to buy the new product of an artist, sight-unseen, based on their having been delivered a pleasurable experience by previous work.

Reality is an edit. People are willing to pay for the authority of those editors whose point of view seems to fit best. And again, point of view is an asset, which cannot be stolen or duplicated. No one sees the world as Esther Dyson does, and the handsome fee she charges for her newsletter is actually payment for the privilege of looking at the world through her unique eyes.

### **Time Replaces Space**

In the physical world, value depends heavily on possession or proximity in space. One owns the material that falls inside certain dimensional boundaries. The ability to act directly, exclusively, and as one wishes, upon what falls inside those boundaries is the principal right of ownership. The relationship between value and scarcity is a limitation in space.

In the virtual world, proximity in time is a value determinant. An informational product is generally more valuable the closer purchasers can place themselves to the moment of its expression, a limitation in time. Many kinds of information degrade rapidly with either time or reproduction. Relevance fades as the territory they map changes. Noise is introduced and bandwidth lost with passage away from the point where the information is first produced.

Thus, listening to a Grateful Dead tape is hardly the same experience as attending a Grateful Dead concert. The closer one can get to the headwaters of an informational stream, the better one's chances of finding an accurate picture of reality in it. In an era of easy reproduction, the informational abstractions of popular experiences will propagate out from their source moments to reach anyone who's interested. But it's easy enough to restrict the real experience of the desirable event, whether knockout punch or guitar lick, to those willing to pay for being there....

### **Information as Its Own Reward**

It is now a commonplace to say that money is information. With the exception of Krugerrands, crumpled cab fare, and the contents of those suitcases that drug lords are reputed to carry, most of the money in the informatized world is in ones and zeros. The global money supply sloshes around the Net, as fluid as weather. It is also obvious, that information has become as fundamental to the creation of modern wealth as land and sunlight once were.

What is less obvious is the extent to which information is acquiring intrinsic value, not as a means to acquisition but as the object to be acquired. I suppose this has always been less explicitly the case. In politics and academia, potency and information have always been closely related.

However, as we increasingly buy information with money, we begin to see that buying information with other information is simple economic exchange without the necessity of converting the product into and out of currency. This is somewhat challenging for those who like clean accounting, since, information theory aside, informational exchange rates are too squishy to quantify to the decimal point.

Nevertheless, most of what a middle-class American purchases has little to do with survival. We buy beauty, prestige, experience, education, and all the obscure pleasures of owning. Many of these things cannot only be expressed in nonmaterial terms; they can be acquired by nonmaterial means.

And then there are the inexplicable pleasures of information itself, the joys of learning, knowing, and teaching; the strange good feeling of information coming into and out of oneself. Playing with ideas is a recreation which people are willing to pay a lot for, given the market for books and elective seminars. We'd likely spend even more money for such pleasures if we didn't have so many opportunities to pay for ideas with other ideas.

This explains much of the collective "volunteer" work, which fills the archives, newsgroups, and databases of the Internet. Its denizens are not working for "nothing," as is widely believed. Rather they are getting paid in something besides money. It is an economy, which consists almost entirely of information.

This may become the dominant form of human trade, and if we persist in modeling economics on a strictly monetary basis, we may be gravely misled.

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# **SoliNet: A Computer Conferencing System Designed for Trade Unions**

By Marc Belanger  
SoliNet

A labor union is a communications system. It exists to collect the views of its members, organize those views into persuasive arguments, disseminate them amongst its membership and finally communicate them to the employer. The effectiveness of a union's mission is largely determined by the success of its communications.

Right from the start unions organized themselves to communicate as effectively as they could. Their primary medium was (and still is) oral: talking to members, making speeches, organizing meetings and conducting classes. But very early on unions moved to adopt the major medium of the day: print. Not only was print effective in communicating to large numbers of members but it was affordable. Unions could print leaflets, publish newspapers and produce position papers. Later unions would begin to use film as an occasional communications tool. But they were never able to effectively use the other major media, which appeared on the scene. Radio and television were simply too expensive for unions to adopt in any significant way. Now however, as the world moves to re-organize its economic activity primarily around information, unions have an unique opportunity to, not only adopt the major medium of the day, but help steer its development.

Computer communications will undoubtedly play a pre dominant media infrastructure of the new information world. And we in the labor movement can use it to enhance our most essential activity our communications. But perhaps more importantly we can take advantage of the emergence of this new medium to guide it our way before it is completely overwhelmed by commercial interests and goals.

One experiment in the development of a union computer communications system is SoliNet the Solidarity Network. SoliNet is a computer conferencing system owned and operated by Canada's largest employee union the Canadian Union of Public Employees (CUPE). It is a public system opened to the general labor movement and its allies with approximately 1500 users. It is likely the world's only national computer conferencing system owned and operated by a union.

SoliNet was started in 1985. In the past seven years of organizing SoliNet we have learned many lessons and conducted many unique projects. This document will touch briefly on those lessons and projects with the hope that we can all begin to share the lessons we learn no matter which computer conferencing system we use.

Each of the topics we will discuss in this paper really deserves a chapter to fully examine. But here we will limit ourselves to just a few sentences each. Think of each section as just the door to a much larger room of information. Someday, after we've learned more computer conferencing lessons, we'll get together and furnish the rooms. We'll build an electronic House of Labor.

Defining the Terms First let's define a few terms. The sort of computer communication systems we are talking about come in two sizes: bulletin boards and conferencing systems. A bulletin board usually serves a local area and can accommodate a few users at a time. A conferencing system has many more features, can be accessed national and internationally, and can serve many users at a time. A computer conference is where a group of users share the same message base. Electronic mail is the sending of notes between individuals. And file transfer is the use of the system to pass computer files

amongst the system's users. Participants use their microcomputer to place a telephone call to the conferencing system. This can be accomplished by a direct telephone call or via the country's computer communication system. Once connected to the system they can read messages that have been left for them and leave messages of their own. People do not have to be on the system at the same time as others in or communicate.

Organizing a Conferencing system the organization of the conferences and options available on a computer conferencing system is largely dictated by the capabilities of the system itself. But most can be organized to provide a unique feel to the organization using the system.

Some of the fundamental organizing questions will include: Who will have basic reading and writing privileges? Who will be appointed "moderators" and "system operators" and be granted extra organizing privileges (to, for instance, create conferences, remove objectionable messages and add users to conferences)?

SoliNet has three levels of users. The system operator is charge of operating the whole system and providing moderator status to particular users. Moderators can create conferences and remove messages within those conferences, which they did not originate. Members have basic rights to read and write messages in the conferences they participate in.

All the organizations, which use SoliNet, have at least one moderator. In addition, locals of unions usually have a moderator to organize their on-line activities.

## **Conferencing**

The interests of the users of course, determine the sorts of conferences on a system. But there are fundamental types on SoliNet: basic conferences, topic conferences and special conferences. These conferences can either be open to the whole SoliNet community or closed to a particular group (with the moderator deciding who has access).

The basic conferences include: A central community conference in which all the members can discuss anything they desire. (on SoliNet we call it the Lounge). And a problems conference in which users can ask questions about how to use the system. (called Problems).

The topic conferences include: Labor Issues; Health and Safety; Women's Issues; Free trade; The Environment; Books; Cooking; Shop Stewards and many more.

The special conferences are usually month-long conferences on particular subjects of interest. For example, SoliNet has run conferences on: Labor Education in the 90s; Technological Change; Pay Equity; Employment Equity; Labor Databases and Full-Text Retrieval Programs.

The moderators of the conferences have to decide whether their conferences will be permanent or time-limited. The permanent conferences are those likely to have continuing conversations (such as a Shop Stewards conference). A time-limited conference usually concentrates on a special issue (such as Technological Change). Time-limited conferences are especially useful for generating discussion because the members feel a deadline pressure to contribute.

## **Moderating a Conference**

The key to the success of a conference is usually a skilled moderator. A moderator has to organize the conversations (possibly by setting discussion agendas); cajole users into participating (it is a lot easier

in a computer conferencing system to just read comments); link themes found in the comments; discipline members (for either overly-long comments or inappropriate comments) and more. Computer conference moderators are like meeting chairpeople with an extra set of skills.

## **Electronic Mail**

By far the most popular SoliNet facility is its electronic mail feature. Members can talk to each other in complete privacy, or copy in other members.

Usually if a conversation in the mail side of SoliNet starts to extend itself and include a number of people there is a demand to establish a conference.

Before the introduction of SoliNet in CUPE our negotiators were limited in their discussions to their immediate peers. But now they can talk to other negotiators anywhere in the country on a regular basis.

## **Supporting Collective Bargaining**

SoliNet is being used in a number of ways to support collective bargaining.

For example, CUPE has geographic areas, which have centralized their bargaining at one negotiations table. In the past it has been difficult to keep the bargaining committee informed between meetings because the members were geographically scattered. But with a SoliNet bargaining conference the committee members can continue their discussion while from their home base.

Another problem with wide-area bargaining is that the locals and members often feel that they are not kept up-to-date on events at the central table. This is especially acute during the latter phases of negotiations. However, on SoliNet central bargaining committees establish conferences open to the members and post regular bulletins of activities. This not only serves to inform the members of the status of negotiations but ensures that they are more involved in the process and ready to support their bargaining committee.

Shop stewards also use SoliNet. They post messages of their concerns and problems into a closed conference. Others in the conference can help solve problems or point to precedents they might use in their relations with the employer. A shop steward conference is especially useful to a local or union with stewards scattered over a large city or geographic area.

Related to the shop steward conferences are the grievance conferences. Stewards and other union officers on SoliNet keep track of a grievance through all its steps by entering periodic reports into a conference. In this way all the shop stewards in the union can see what grievances are being processed and at what stage they are at. Conferences are also used to hold summaries of negotiations. If a negotiator reaches a settlement he or she enters a short description of the agreement in a conference. All the other negotiators participating in the conference can then be kept up to date on bargaining trends in their area and use the information in their own bargaining sessions. A search facility on SoliNet allows conference participants to search for particular agreement report by keywords.

SoliNet is also used for supporting strikes and organizing campaigns. For example, the public relations departments of the various unions, which use SoliNet, can quickly send copy for a strike leaflet or organizing pamphlet to the local negotiator.

## **Education**

SoliNet has been exploring some very exciting uses of computer conferencing in education. We have operated a number of courses completely on-line (solely with the use of SoliNet). For example participants in a recent course on Technological Change never met in a class. Instead they interacted with their instructor and fellow students in a computer conference.

There are two major advantages to this sort of education. First of all, the students can participate in the course at their convenience. Secondly, instructors with particular skills (such as health and safety) can be made accessible to the whole country.

A variation of this service is the support of regular face-face-to-face classes. The students in a regular class can keep in touch with the instructor and their fellow students via SoliNet after the course is finished. For example, when CUPE equipped its negotiators with microcomputers it held a series of basic workshops. This included training on how to use SoliNet. Afterwards, a computer course was provided for the negotiators via SoliNet.

Another use of SoliNet is the gathering of data on who attends or teaches educationals across the country. The names and addresses of the participants are file-transferred to the union's central office and automatically entered into a central database. Students can be tracked through union education for prerequisites and certificates.

A particularly interesting educational project on SoliNet is the linkage of the labor movement with universities. SoliNet is working with the University of Athabaska (which is based in Alberta) to provide university-level courses completely on-line. We hope this service will eventually allow unionists to complete a university degree via SoliNet.

But why stop there? There is a great potential for developing a global Labor University. Instructors and students could participate in educationals from anywhere in the world.

## **Research**

SoliNet is being used to collect and disseminate research information and support negotiators in bargaining.

For example, summaries of collective agreements are posted in conferences. The information for these summaries is collected and organized via an on-line form. A secretary or a negotiator in a office calls SoliNet and chooses a menu item for Collective Agreement Report. A form appears on the screen, which they fill out. Once completed, the information in the form is then posted into a conference. The national research department then has a timely overview of the agreements, which are being reached and can analyze them.

Another service involves the use of spreadsheet files. The CUPE research department, for example, gets statistical information from a commercial database. It organizes this information and enters it into a spreadsheet file. The file is then transferred to SoliNet where it can be downloaded into the spreadsheet program on the computers of the union's negotiators.

Research departments also use SoliNet to help prepare briefs. By interacting with a negotiator or local union representative via SoliNet conferencing or mail they can gather information for (as an

example) an arbitration brief. They can send drafts of the brief via SoliNet for discussion and then send the final product.

A current project being organized on SoliNet is a library of research papers. Increasingly the documents prepared by unions are in an electronic format. These electronic documents are being collected from the various unions and entered into SoliNet. In this way the Canadian labor movement is building an on-line labor library.

### **Political Action**

SoliNet has proven particularly effective in developing political action campaigns.

Activists organizing the campaigns, for example, can keep in touch using a SoliNet conference. They find out about tactics that are working in other areas, learn about government counter-actions and brainstorm ideas for new actions.

SoliNet is particularly useful for quickly distributing leaflet copy. The central organizing committee can make available on SoliNet a leaflet that can be downloaded by local area people and quickly distributed. A great advantage of this form of leaflet distribution is that the copy is easily editable for local angles and information.

This capability proved itself recently when a provincial government in Canada organized a touring committee to study potential changes in a piece of legislation. The CUPE research department prepared a "core" brief that local unions could present to the traveling committee. The local activists edited the core brief, added their own angles and information and then presented the brief to the committee. In this way, many organizations around the province were able to influence the committee's work.

### **Supporting Publications**

The capability of electronic documents to be easily editable has been used to help local unions prepare their newsletters.

For example, a central organization of labor newspapers posts monthly news packages on SoliNet. The members of the organization download the package, edit the stories for local angles, and use them in their local newspapers.

SoliNet is also being used for disseminating media releases. For example, the Canadian Labor Congress enters all its media releases in a SoliNet conference. This not only gets its news and views out to affiliated unions but as well provides copy for union publications.

SoliNet itself provides a weekly labor news service called SoliNotes. Every Monday approximately five pages of labor news are entered into a SoliNet conference. The news is gathered by searching various databases and re-writing the articles. SoliNet members can download the newsletter, photocopy it and distribute it around the work place. As well, union publications can use SoliNotes to augment their publications. Canada now has a weekly news service something it could never have had if we had to depend on printing a newspaper and mailing it. One consequence of this is that a whole new category of news is being made available to the movement. More timely items (such as when a union goes on strike or is affected by lay-offs) can now be reported without being labeled stale news. Items, which would have been labelled stale, would not normally have been reported in a monthly publication.



## **Full-text retrieval**

SoliNet is currently working on providing a full-text retrieval system. This system will allow users to up-load the text of complete documents, such as employment contracts. Other SoliNet members can then use sophisticated searching commands to find particular documents.

For example, the CUPE Job Evaluation department is preparing a Job Description Database. Individual job descriptions will be entered into SoliNet and these descriptions will be searchable for particular items. Users will be able to download the descriptions they need.

The full-text retrieval system we are developing is based on a separate program, which operates on the same computer as SoliNet. Members will exit the conferencing system and use this separate program for their searching needs. In the next generation of SoliNet we will be integrating full-text retrieval into the conferencing system itself.

## **Administrative Support**

SoliNet is also being used for union administration. For example, negotiators in the field can now electronically file their expense accounts via SoliNet. And local unions can ask the central office for information on their per capita payments.

Another project we are working on is the development of a central database of names and address in CUPE. Local CUPE offices will be provided with a computer program to produce their mailing lists. Files from these programs will be sent to the national office and merged into a central database.

## **Inter-Union Communications**

One of the great advantages of SoliNet being available to the whole Canadian labor movement is interaction between the various unions. This has led to the development of coalitions, the organizing of inter-union workshops and co-ordination between unions on bargaining issues.

As well, SoliNet is helping to build a better sense of community amongst unionists in the country. By allowing activists in various unions to communicate with each other SoliNet is helping to build the strength and cohesiveness of the Canadian labor movement. We hope that SoliNet's example can be used to develop greater labor movement cooperation around the world.

## **CCing: The Next Generation**

Almost all the computer conferencing systems currently in place are first generation, character-based operations. But computer conferencing is changing very quickly. There are three major forces at work developing the next generation of CCing systems:

First of all, computer conferencing systems are starting to be tied together into a global network called the Internet. In essence the Internet is a method of connecting a large number of databases and conferencing systems. People can use the Internet to enter databases around the world and send e-mail messages to other Internet users. Originally the Internet was designed for the American military but it quickly became a network, which also connected academic institutes. Now many other organizations such as SoliNet are linking themselves to the Internet.

The second force at work in the development of CCing is multi-media. The current systems are almost all character-based and relatively difficult to use. The new systems now coming into play include icons, mouse-driven operations and advanced text handling features. The third generation will include sound, video, voice recognition, sophisticated database operations and other features.

The third force affecting computer communications is cost. The hardware and software expenses related to the establishment of an internal e-mail system on a Local Area Network are dropping. That has advantages as more organizations can afford to develop their own systems. But it has disadvantages as well. Unless organizations adopt common systems or standards they will not be able to easily share their data or the special programs they create.

Where will the labor movement fit into all this? It depends mainly on whether the unions control wide-area computer conferencing systems or are clients on commercial systems. If they have their own systems they can adapt them to their needs and continue to participate in the growth of the medium. If they remain clients on commercial services they will be forever subject to the dictates and capabilities of whatever service they subscribe to.

Consider the Internet for example. If unions owned their computer systems they could develop databases with programs and information designed especially for the labor movement. A commercial service might provide space for labor information but would be unlikely to provide special data collecting or retrieval programs at an affordable cost.

Or consider the advances in computer conferencing. At the moment we are all working at the same level: all the systems are first generation, character-based. A union system such as SoliNet is not much different than a large commercial system such as Geonet. Our members see the two systems as being roughly at the same level of service and capability. But soon, as millions of dollars are spent on the development of second-generation commercial conferencing systems, union operations will seem archaic. Our members will not want to use our systems because they will be perceived as second-rate.

Or take the drop in costs related to the development of in-house e-mail systems. More unions will be able to afford systems for their organizations. But the danger will be that they will all go their own separate ways. Unless we adopt standards or use common systems we will segregate ourselves into isolated systems.

What's more, even as the cost of developing computer communication systems drops, labor movements in poorer nations will not be able to afford their own systems without some assistance. We will see a growing gap between information-rich and information-poor countries with dire consequences for working people in the poorer countries.

What can we do about all this?

### **Towards A Labor Network**

We are witnessing the birth of a major new medium computer communications. We can participate in its development and consequently ensure a labor presence in the medium as it matures. Or we can relegate ourselves to a client role in the major networks as they develop.

Think of radio in the 1920s or television in the 1950s. If labor had pooled its resources at the birth of these media it could have influenced their development and become a major participant in them. But it did not. And today we are effectively locked out of each medium. In ten or twenty years will the

labor movement be bemoaning its lack of access to the world's major computer communication systems? Yes it will unless we co-ordinate our efforts and resources today.

The labor movement has a unique opportunity to develop its own worldwide computer communications system. We can do this in partnership with existing operations such as Poptel in Great Britain and The Association of Progressive Communications (which has affiliates in the U.S., Great Britain, Australia, Canada and other centers.) Here is the idea:

The international labor movement should establish a global computer communication network. This network would consist of computers acting as conferencing systems locally, nationally or internationally and all capable of sharing conferences and electronic mail. The immediate goal would be to establish at least one computer system in each continent or large country.

These computer systems could be established by the labor centrals in each country or by international labor bodies. These organizations could use their in-house computer departments. Or they could work with outside organizations sympathetic to the labor movement such as Poptel or the APC. As well, individual unions could establish their own in-house systems using the same hardware and software. Richer nations could be encouraged to develop their own networks. Poorer nations could have their networks subsidized for them.

### **SoliNet Version 2.0**

The key to the development of this sort of global labor network is the adoption of a standard computer conferencing system. This system should be able to meet the current computer conferencing needs of organizations as well as be able to grow as the medium matures. That is why SoliNet has been part of a development group designing a new computer conferencing system to produce the second generation of SoliNet. SoliNet Version 2.0 is based on a program called CoSy, which has been produced by Softwords a company based in Victoria, Canada. It incorporates all the features unions and labor centrals will need to establish their own conferencing systems and grow with the medium. It can connect to the Internet. It can be programmed for specific labor projects. It has multi-lingual capabilities. And it can share conferences with other SoliNet systems. It is the result of all the lessons SoliNet has learned about computer conferencing and labor unions in its eight years of activity.

SoliNet Version 2.0 can be purchased directly from SoliNet. Organizations can purchase just the software and run it on their existing Unix-based computers. Or they can purchase a complete computer system, which just needs to be plugged in. The cost of the software depends on the number of users served. But for example, a license for 1,000 users would cost \$10,000 (U.S.). The cost of the hardware needed to run the program would be approximately \$15,000 (U.S.). The establishment of a complete system, which could act as a node in a global labor computer communications network, would cost \$25,000 (U.S.) The data communication charges would depend on the usage of the system.

### **The Global Labor Movement**

Labor movements can no longer afford to isolate themselves within their nation states. As the global economy develops they will have to build strong linkages with unions in other countries. Computer conferencing can be an effective tool in helping to build these linkages.

But the opportunity to develop an international labor computer communications network is not unlimited. We must grab it now as the medium is emerging. If we do, we can create an exciting and effective way of building international labor solidarity.

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*August 1993*

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# **Empowering the Info-Poor: The Community Computing Center Movement**

By Peter Miller  
CPSR

"In a large, airy room there is a crowd of young people and adults all working at computers. In one group students are having their first experience using a spreadsheet on an IBM PC. At the same time, in another corner, a senior adult is teaching herself to use a database on an IBM PC. A young man is updating the church's membership files and printing mailing labels. A young woman is at the Macintosh working on a desktop publishing project, and two teenagers are in another corner debating how best to make the logo Turtle do what they want it to do. Others are casually 'messaging about with simulations. They are all using these technologies to achieve their own personal goals and objectives."

The "community computer center" movement is part of the larger community technology movement in general, and is reflected in the growing trend among community-based organizations, social service agencies, churches, and community centers for acquiring and integrating computers into their programs.

Just as schools, libraries, museums and summer camps in our more well-to-do communities are acquiring and developing computer components and resources, so, too, are day care programs, Boys and Girls Clubs, YMCA's, and other indigenous low-income community agencies and centers, albeit, as in everything else, with severely restricted finances. The entire field of employment and training itself is increasingly coming to be defined in computer skills terms. The community computing movement bridges generations. Recreation, support, and training programs for seniors are seeking out computer resources, too

No wonder. Computers are powerful tools for helping individuals from many disadvantaged groups. Adult literacy students gain confidence and facility in reading and writing English through use of the word processor. Unemployed workers prepare resumes and cover letters and learn and improve keyboarding, business applications and systems skills for re-entering the job market. After-school and day care children learn how useful and fun computer applications can be. Participants of all ages improve their communications, writing, keyboarding and literacy skills and gain knowledge of the world and others through growing telecommunications options - online chats, email and pen pals, contributing, posting and commenting on essays and stories, and working on joint projects frequently involving graphics and desktop publishing.

As computers become more and more ubiquitous, their appearance among programs and agencies, which serve primarily poor people, is part of their "natural" development. Yet it is a movement, too, which is guided by the radical democratic egalitarian principle that basic tools of daily life need to be accessible to everyone.

## **PLAYING TO WIN**

This radical and self-conscious philosophy is most articulate among those programs, which have established community-computing centers in a deliberate fashion. Among these, one of the most developed is Playing to Win (PTW), a 13 year-old nonprofit headquartered in Harlem. PTW is nationally recognized as a pioneer and leading advocate of equitable access to computer-based

technologies. The Harlem Center provides a range of computer-based learning and playing opportunities. In 1990, the National Science Foundation provided PTW with funding to help establish a network of 30 centers across the eastern United States. There are currently centers in New York, Boston, Washington D.C., Pittsburgh, Philadelphia, and Jacksonville, Florida. The scene depicted at the beginning of this article comes from the Staff and Volunteer Handbook for PTW's Washington affiliate, Future Center, the community technology lab at the Capital Children's Museum.

PTW is established on the principles that technology is a tool to help participants achieve their own goals; students work together as much as individually and learn as much from play as from work. Teachers are facilitator, resources and participants in the learning process. Curriculum is project-based. Playing to Win founder Antonia Stone is coauthor of, among other books and articles, *The Neuter Computer*, designed to help educators, parents, students, teachers, trainers and policy-makers overcome the computer gender gap, and *Keystrokes to Literacy*, which shows how to integrate computer with traditional literacy.

This focused and developed philosophy helps define the Harlem and Washington centers which are complex and sophisticated, and it helps more modestly-sized and financed programs make a substantial impact, too.

## **BOSTON'S EXAMPLE**

"Recognizing that in our increasingly technological society, people who are socially and economically disadvantaged will become even further disadvantaged if they lack access to computers and computer-based technologies," the Technology Education Council of Somerville, Massachusetts, was formed in August 1959. The Technology Education Council established local control and management of the Somerville Community Computer Center (SCCC). SCCC provides residents of all ages' access to computer-based technology, which they would not otherwise have.

With active support from the city's Adult Education program known as SCALE (the Somerville Center for Adult Learning Experiences), the Community Action Agency of Somerville, Apple Computer, and PTW, the SCCC provides low-income Somerville residents with access to equipment, training and technical assistance. SCCC serves as the computer facility for adult education and human service programs in the Somerville Community Service Center building.

Programs include employment and training; ESL, ABE, and GED programs; during- and after-school programs for the Community Schools and the Powderhouse public elementary school next door; and other programs for Head Start and Even Start students, teachers, parents, and staff. Elderly participants from the Council on Aging also use the center. The Mystic Learning Center Teen Program, Elizabeth Peabody House Day Care and the Open Center for Children, Short Stop Youth Shelter, and Somerville/Cambridge Elder Services come over to the SCCC to use its technology

One of the hallmarks of community computing center philosophy and service is open access hours for the general public where anyone in the community can come to, use and get help using equipment, software and peripherals. The SCCC has provided six sessions totaling 14 hours a week of this access and support on Apple tie, Macintosh and IBM-compatible platforms over the last two years. SCCC serves as a useful model and training ground. A \$2 donation is generally requested but no one is ever turned away because of financial hardship.

Elsewhere in the Boston area, the United South End Settlements has a Computer Resource Center, which serves all the programs in the Harriet Tubman House as well as such groups as Jewish

Vocational Services and the computer literacy and access program for Project Place. Project Place is an adult day shelter, which serves as the magnet program for all the homeless shelters in the Greater Boston Adult Shelter Alliance. The Roxbury Family YMCA has an established computer lab, too, which serves all its programs and provides a key component for its summer camp. The Roxbury YMCA recently collaborated with the Boston Computer Exchange, a local used- computer reseller, in providing more than 40 families with double disk drive clones for less than \$100. Boston's famed Computer Museum has just opened a Club House, geared to 10 to 15 year-old low-income youth, with special multi-media resources in virtual reality, robotics, music, desktop publishing and game design.

Community computing centers extend well beyond the PTW network. In just the Boston area, La Alianza Hispana and the Dorchester YMCA have major labs, which serve their communities. Freedom House has an expansive lab of DEC and Macintosh equipment which serves not only all of its agency programs, but is also the facility for an independent business-training program as well. The Cambridge-based Lotus Development Corporation's Philanthropy Program and the Boston Foundation have funded the Greater Boston Community Technology Access TV and, in collaboration with the Boston Computer Society, provides training to public access TV participants in Deluxe Paint III on its Amigas for the production of short animations for broadcast. Cambridge Community Project. This project supports all of these programs as well as over two dozen special projects involving various Boys and Girls Clubs, unions, immigrant organizations, Survival News (the official newspaper of the National Welfare Rights Organization), and homeless organizations. Staff, board and volunteers with community computing centers have provided key personnel for the first three Boston Computer Society (BCS) and CPSR-sponsored New England Conferences on Computers and Social Change.

## **A NATIONAL MOVEMENT**

The scene in Boston is being replicated to various degrees all across the country. Community computing centers frequently work closely with PC user groups as well as CPSR chapters since they have a strong need to rely on the volunteer support of those with computer skills. Computers and You, the lab-based project of Glide Memorial Church in San-Francisco, is frequently looked to as a model. The North Texas PC Users' Group has helped establish a network of community computing centers in Dallas. The Clerical Skills Training Program of the Metacenter YMCA in Seattle teaches clerical, computer and employment skills to low- income youth. The Association of Personal Computer Users Groups (APCUG) is working with the computer industry in presenting REACH Awards to Recognize Exceptional Achievement in Community Help and publishes a national resource guide of community computing projects.

## **THE WIDER COMMUNITY TECHNOLOGY MOVEMENT**

As part of the wider community technology movement, community-computing centers are starting to receive attention from local community access television stations. The SCCC has close relations with Somerville Community Access TV and, in collaboration with the Boston Computer Society, provides training to public access TV participants in Deluxe Paint III on its Amigas for the production of short animations for broadcast. Cambridge Community Television is a few doors down from the BCS, and Malden and Lowell cable access are both in the process of developing computer components.

Last year's December issue of Community Television Review was dedicated to computer resources projects. CTR is the publication of the Alliance for Community Media, formerly the National Federation of Local Cable Programmers. The organizational name change and its expanded focus are

solid indicators of where all the talk about the convergence of cable, data and the telephone is going. We can certainly anticipate that the future will see the development of community technology centers.

## **NO EASY ROAD**

Community computing centers face many obstacles. What kind of equipment should be acquired? What kind of software? How do we get it? How do we integrate the technology into ongoing agency programs? How do we develop public access components? How do we develop funding sources; establish a support or advisory board; and recruit and train volunteers?

However serious these obstacles, community-computing centers do hold enormous promise and provide a unique volunteer opportunity. If you're interested in helping out, find out what your local PTW affiliate, Boys and Girls Club, Y or community center is doing. Or contact your local CPSR chapter or computer users group. There are lots to do. By the very fact of belonging to CPSR, CPSR members indicate a special combination of skills and interests.

Your assistance on the front lines can make a crucial difference.

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# **The Promise and Peril of the Third Wave: Socialism and Democracy for the 21st Century**

By Carl Davidson, Ivan Handler and Jerry Harris  
The Chicago Third Wave Study Group / May 1, 1993

The collapse of Soviet socialism is being celebrated by the defenders of imperialism throughout the capitalist world as the definitive victory in a struggle that has been waged for some 150 years.

It doesn't matter in these circles that the Soviet system was a deformed, or distorted, or corrupted, or phony version of any socialism that Marx or Lenin would have recognized as their own. Nor does it matter that there are still a few pockets of resistance holding out, whether on a small scale in Cuba or on a large scale in China.

What does matter to them is that the only socialism that claimed to be an existing alternative for advanced industrial society is no longer a competing force.

The left now generally acknowledges the crisis. Some stalwarts were in deep denial until the very end. But despite this major defeat, the left, for the most part, still hopes to keep the red flag flying. For better or worse, most of the left groups and trends still want to defend their own brand of socialism, or at least defend a given set of socialist goals or ideals, if not socialism itself.

As for the collapse or stagnation of existing varieties of socialism that held state power, the left generally tries to explain these failures as stemming from a internal lack of democracy or a surplus of bureaucracy, or as a byproduct of external imperialist aggression or military competition, or some combination of all these factors.

We want to argue for a different approach. In our view, the crisis is deeper than a fundamental flaw in the theory or practice of socialism. We believe the causes of the failure of socialism lay in its historical roots in an industrial society, which is itself in crisis. We see the current chaotic situation around the world as the advent of an all-sided and deep structural crisis that is sweeping not only through the socialist countries, but the capitalist countries as well. Rather than witnessing simply the end of socialism, we believe we are witnessing the start of a new radical upheaval in industrial society generally, in both the capitalist West and the socialist East.

This perspective is not original with us. Much of the analysis that follows is taken from the work of Alvin and Heidi Toffler, co-authors of three widely read books: Future Shock, The Third Wave and Powershift. We believe the socialist movement has a great deal to learn from both the questions they pose and the answers they supply.

In its limited analysis of the crisis so far, we believe the left has downplayed what the existing capitalist and socialist economies of the West have in common in real life. In industrialized society, labor and machinery are organized along similar lines in both capitalist and socialist countries--the primary means of generating wealth is the mass production of the factory-based assembly line.

While each economy has its own particularities, the main patterns of socialized mass production are reflected and reproduced in all arenas of human endeavor. Moreover, these systems of mass production are linked together in country after country, as a dynamic and expanding market develops national industrial societies into a global system. For industrial mass production, the main dominant

patterns of social organization are the forms of presumed rationality: concentration, centralization, standardization, specialization, maximization and synchronization.

But despite its claim of rationality, industrial society is not a sustainable form of civilization, especially as it expands on a world scale. Its energy sources, whether capitalist or socialist, are primarily nonrenewable hydrocarbons--oil, natural gas or coal--or toxic radioactive materials. Not only are these energy sources irrationally, unevenly and unfairly distributed; their full and complete use is also irrational. The steady, ongoing overuse of carbon-based systems would transform all of the solid and liquid forms of the element now underground and pump them into the atmosphere in the form of carbon dioxide. The end result is the "greenhouse effect"--a complex web of environmental disasters wreaking ecological havoc and rendering the biosphere unfit for human habitation.

This feature of industrial society is not a problem of the distant future. It is the "dirty little secret" of today's world standing behind the rising conflict between North and South. The truth is that we cannot have economic equality among nations based on today's levels and standards. If every country in the world were organized on just the same level and just the same types of production and consumption that are "enjoyed" in either the U.S., or Europe, or Japan, or even the former Soviet Union, the resulting polluted biosphere would render the globe uninhabitable for humans.

But industrial mass production is expansionist. It strives for universality, transforming industrial society into a mass society. It features mass urban centers, mass markets, mass media, mass culture, mass education, mass consumption, and mass political parties. While advanced capitalism roots itself in the mass market and mass consumption, Marxism too has reduced complex and diverse populations to oversimplified conceptions of "the masses."

Today's technological revolution has pushed industrial mass production to new heights in the capitalist world. New and upgraded factories continue to produce an ever-wider variety of commodities of improved quality at lower prices with less labor. Telecommunications has integrated capital markets into a 24-hour, on-line global system of exchange. The full consequences of these developments are only beginning to take shape, although change takes place at an increasingly rapid pace.

The main reason for today's ongoing revolution in the productive forces was the invention of the microchip. This revolution began in the 1950s with the merging of transistors, themselves the first major practical application of quantum mechanics, with the mass replication of miniaturized integrated circuits. The result was a device that vastly expanded the ability of the machinery of mass production to process information rapidly. In fact, the speed of the microprocessor has enabled information to be used within a time frame and on a scale of complexity hitherto unimaginable. Information itself has become an increasingly valuable commodity of a new type.

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; others refer to the same phenomena "post-industrial" or "postmodern" civilization to differentiate the present from the agricultural or industrial past. Neither of these two earlier revolutions or waves of change--the agricultural and the industrial--is fully completed. Both are still having an impact today. As for the first wave, in some remote corners of the globe, hunter-gatherer societies continue to be drawn into settled agricultural modes of production. The persistence of the second wave is much more apparent. It continues to surge in the

new industrial revolution now spreading in the formerly agricultural regions of Asia, Africa and Latin America.

But the third wave of change, rooted in the impact of the microchip, is spreading even more rapidly. It has been underway for less than 40 years, mainly in the industrial societies of Europe, North America and Japan. It is the main feature of the shift from industrial to post-industrial society; and its promise and peril will soon be projected into every corner of the globe.

A society becomes "third wave" when a majority of its labor force becomes mainly and irreversibly engaged in processing information and providing services, rather than directly producing "hard" commodities or farm products. In the U.S., this point was reached by 1960.

This does not mean that a third wave society stops producing the traditional goods of basic industry. It is an even greater industrial powerhouse than before; but now it manages to produce these goods with a relatively smaller and smaller proportion of the labor force.

A good analogy is U.S. agriculture. Less than 100 years ago, a majority of the American labor force worked on farms for a living. Today U.S. farms are the most productive in the world, supplying not only the domestic market but the world market as well. But now less than 3% of the labor force works on farms. Mechanization and relatively large amounts of fertile land are only part of the reason for this. U.S. farmers are also many times more productive than earlier farmers because of information--whether in the design of equipment, fertilizers or hybrid seeds, or in advance knowledge of weather patterns transmitted by modern communications.

### **Surplus value as knowledge**

Information is not a new component of production, even though its relative importance has grown with the progress of society. In fact, the creation of value, whether use-value or exchange-value, is best understood as the result of expanding the information content of the productive process. An average laborer in industrial society can produce much more value than he or she needs to survive comfortably. A similar worker on a pre-industrial farm will produce far less wealth using a far greater expenditure of labor-time. The difference here is not the worker but the tools and organization of work.

The machines of the industrial era were created by the combined efforts of inventive workers, scientists and engineers of past and current generations. They designed machinery to amplify a worker's abilities. For example a stamping machine amplifies a worker's strength; a conveyor belt amplifies a worker's ability to move and access materials. In addition to machinery, new methods of organizing production also amplified each worker's effectiveness. Industrial production thus has a much higher knowledge component than pre-industrial agriculture or even the craftsmanship of early manufacturing. There the individual worker had much knowledge, but the productive process had comparatively primitive tools.

In the information age, the knowledge content of production has become even higher. 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, while the productivity of the individual worker soars in inverse proportion.

This change is also causing another important reversal. On one hand, the workforce responsible for production is becoming more educated (in certain sectors) as its productivity increases. On the other hand, the workforce in many service areas (such as marketing) is becoming increasingly comprised of large numbers of very low skilled workers. This is especially true for specific data gathering tasks -- data entry, feeding paper into Optical Character Recognition readers, scanning barcodes, etc. This may be a temporary phenomenon until new techniques are discovered to reduce the amount of labor needed to carry out many of these tasks. For example, the phone companies are continually adding new automated voice services for its customers, which is increasing efficiency and reducing the number of telephone operators. In any case, the less educated sectors of the labor force are forced to compete for a dwindling number of better-paying jobs or forced out of employment altogether.

The result is a deep structural crisis. The advent of the third wave is by no means a twinkling, painless shift into a utopian wonderland. It is more like a hurricane, leaving disorder and destruction in its wake. The third wave guts entire workforces and industries to the point of collapse. It sabotages old markets and renders national borders meaningless. It makes possible a glut of highly quality and relatively inexpensive goods, while also producing a radical and uneven restructuring of the working class itself.

Generally speaking, three main groupings of workers emerge in third wave society. The first group is a dynamic and growing force of skilled analysts, designers and technicians filling the new jobs created by the new technology, whether in the private or public sectors. The second group is a stagnant or shrinking force of both skilled and unskilled "blue collar" occupations. Their ranks are being depleted by automation or by the export of their jobs to the huge pools of far cheaper but now "globalized" labor in the newly industrializing regions of the third world. The third group is a growing deskilled pool of unemployed and even unemployable workers. From the capitalist perspective, these workers have a negative net value--even if they were employed, their skill level would result in the production of less value than the cost of sustaining them. This is the so-called "permanent underclass"--people with inadequate incomes for the necessities of survival, let alone to buy the higher quality goods of third wave production.

The third wave thus contains both promise and peril. On one hand, it fuels the unemployment and social chaos that breeds the danger of war and genocide. On the other, it creates entire new industries in biotechnology, aquaculture and alternative energies. In this sense, the third wave contains the potential for sustainable advanced "green" technologies that can serve societies of abundance, decency and human rights for all.

But what is worse than the dangers posed by the third wave is the attempt to ignore or stifle the information technologies fueling it. This was a deep flaw in the structure of the "command economies" of the Soviet bloc, which based their politics on the centralized control and restriction of information. The growth of the new technology requires open, accessible and decentralized sources and outlets for the flow of information. But this was hardly possible in societies that stationed soldiers to guard photocopy and fax machines. Far from creating political security, these measures were only effective in insuring the economic backwardness of the societies practicing them. Relative to information-rich production methods and products in the West, the socialist factories were thus inefficient, wasteful and, with few exceptions, produced outmoded or shabby goods.

To be fair, the feudal and capitalist worlds initiated these practices of attempting to control politics by controlling information. It was Hitler's propaganda machine that gave birth to the term "totalitarian." The use of the state to control and restrict the market in information, moreover, was simply an extension of state intervention in the traditional economy. Capitalist industries in the West have

always tried to use the state to "protect" favored industries from competition with more productive, better-organized factories in other countries. Trade unions have also tried to "protect" obsolete jobs with featherbedding work rules. In the U.S. auto industry, for example, both management and labor believed that planned obsolescence was acceptable as a way to guarantee future demand, growth and job security. Instead they guaranteed stagnation and backwardness. The result was a huge opening for Japan to take a larger market share with a better product.

A left that fails to base itself fundamentally on an accurate assessment of the nature and direction of these developments in the productive forces does not deserve to be called Marxist. At best, its critique of capitalism and industrial society generally will be limited to moralisms and will become irrelevant to practical politics. At worst, it will propose bankrupt solutions to the crises that will evoke a reactionary nostalgia for the fetters of the old order.

It does no good, for instance, to call for a re-industrialization of the economy along the lines of the blue-collar industries of the past. 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.

Marxists especially should not be calling for a retreat to less advanced, more inefficient, more wasteful, and less skilled forms of production that turn out poorer goods at higher prices. In fact, it has always been part of our strategic critique of the bourgeoisie that its interests and methods placed fetters on the productive forces of society and produced a moribund, wasteful and decadent system.

### **Taking A New Look at the Lessons of History**

Seen from this perspective, the failure of industrial "second wave" socialism is part and parcel of the collapse and transformation of second wave industrialism worldwide. In particular, its earlier uncritical and dogmatic embrace of industrial patterns as "scientific" or "progressive" regardless of limitations or conditions hastened the socialist crisis.

Second wave industrialism concentrated huge productive forces of machinery, labor, and capital. Working class communities surrounded giant factories, where communist "concentrations" were to be built as part of the newly massified neighborhoods. Socialist political structure was to reflect the skeleton of industrial organization and life. The whole working class, for instance, was to be concentrated into one mass party with a single strategy. Advocacy of diversified, multi-party systems or strategies was frequently denounced as "liberal" or "bourgeois."

This industrial principle of concentration was carried forward into Soviet economic and social planning. Whole new cities were built around giant factories. As Lenin put it, maximization was the "highest level of development." Bureaucracy was the inevitable and natural organizational form when all production and planning was to be concentrated under the state. A diversified market was not only politically incorrect, but supposedly went against the industrial principal of efficiency through concentration.

The communist party was to be built along the same centralized lines as factory management; rank-and-file "Jimmy Higgins" workers, mid-management full-time cadre, and the elite board of trustees, or central committee. Just as industrial management reflected hierarchical relations of power, socialist political relations contained the same design.

The "democratic centralism" that developed within this pattern was one where democracy was always a secondary aspect to a centralized and hierarchical leadership responsible for decisions and control of information. This pattern of centralized power was as true for capitalist monopolies, as it was for socialist bureaucracies responsible for production. Within the ruling party itself, Stalinism took this principle to its zenith in its centralization of international political authority

Specialization was also part of the second wave industrial code. The efficiency of a labor task was seen in its specialization, which also gave rise to the professionalization of work. For Lenin this meant the professionalization of the cadre into a full-time revolutionary, and later for Stalin as the "red expert". Eventually this resulted in the separation and domination of political and technical work from democratic input and oversight.

Lastly, mass production also produced standardization. Everything from time, weights, and products, to culture and ideas was standardized. For socialism, the impact was a dogmatic standardization of Marxism, the political line set by the one accepted center, the Soviet Communist Party. Differences were not only suppressed inside the USSR, but also even worldwide. Bolshevik organizational structure became the standard for acceptance into the Third International. And perhaps even more destructive, was the idea that there existed only one economic model on which socialism could be built.

A one-sided emphasis on all the above elements was the product of industrial society, and forms a fresh basis of criticism for a lack of socialist democracy. Socialism, understandably, could only function within the world to which it was born. When socialism embraced the proletariat as the primary agency of progressive change, it also tended to romanticize industrial society. Socialism thus consciously or unconsciously integrated second wave industrialism's intern designs and limitations into its own theory and practice.

Was there any alternative? Could socialism build a democratic, open and participatory society based on industrial principals? Although both the Soviets and Chinese experimented at different times with worker-controlled factory committees, worker congresses and collective management, 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. The very design of large scale production enforced its own organizational logic.

Second-wave industrialism not only engendered mass society, but also had encoded on its structure forms of mass domination. The centralization of information necessary to run huge firms was best done with a concentration of authority in the hands of a specialized hierarchy. In both East and West, this was touted as the most efficient and scientific form of production, although not necessarily the most democratic.

Within this context, it became extremely difficult to permanently build a democratic socialism, although the tension between democracy and centralization existed for a long time. Under Lenin, the Bolsheviks certainly had relatively open and free wheeling political debates, rather than a standardization of thought. And Lenin became more acutely aware of the dangers of bureaucracy as they emerged towards the end of his life. After Lenin's death, the theoretical and programmatic effort to launch an alternative to the abuses of industrial socialism was best defined by Bukharin, who, along with Lenin, was the main theoretician of the Third International on a world scale and of the New Economic Program (NEP) in the Soviet Union itself.

In fact, the most vital debate from the late 1920s through the 1930s was not between Stalin and Trotsky, but between Bukharin and Stalin.

For Bukharin the NEP was more than a temporary adjustment or retreat. Instead it was a strategic plan to build socialism through a balance between rural and urban economies. Bukharin defined this as "dynamic economic equilibrium" in which the growth of industry was geared to the growth of agriculture, instead of its one-sided exploitation. This view reserved an important role for the market, and saw class struggle mainly as managed, peaceful competition between larger state enterprises and the smaller private sector.

For the Stalinists, rapid concentration, centralization, and forced growth at gunpoint were the means that would win the class struggle for their variety of socialism. Class differences were to be forcibly eliminated, rather than peacefully managed. This path was certainly not inevitable, but the global and historic context of the industrial era was an important factor in developing, supporting, and rationalizing the Stalinist economic plan.

We believe revolutionaries who are genuinely progressive and democratic must reconstruct society with the people, tools and materials bequeathed to them by history. We oppose the forced march of armed utopias and their attendant gulags. But we also believe the old state and industrial patterns and methods of command cannot simply be taken over and put to good use by new elites.

The capitalists launched the industrial revolution and became the new global masters because they dominated and developed the new industrial economic base of manufacturing. They did not base their revolutions primarily on a seizure of the feudal manors and landed estates of the old agricultural societies. The socialists of the second wave, however, have been ambivalent. On one hand, they based themselves on the advanced, rising class, the proletariat. The working class was the most advanced, not because of what it thought at any given time, but because it was part of the most advanced productive forces and thus had the ability to remake society. On the other hand, they attempted to build a new world mainly by expanding the old unsustainable, second wave industrial base, rather than by nurturing a new historic economic order out of the most advanced achievements of the second wave.

In this way, Marxism spawned two visions of the future classless society. In one, all classes were to be abolished except the proletariat; all society was to be industrialized and proletarianized under the hegemony of the working class. The proletarian ideological line is dominant over all forms of science, art and politics. In the other, all classes, including the working class, were to wither away through the gradual but steady abolition of toil brought about by the revolutionary advance of the productive forces. All ideology and politics is subordinate to freedom of scientific inquiry, tolerance of diversity and the expansion of universal human rights.

We affirm the latter view. We also believe it is more in keeping with Marx's early conception of the proletariat as the class bound with radical chains, so that by freeing and abolishing itself, it also liberated all humanity from all forms of oppression. What is needed to accomplish this is political power in the hands of the masses plus the technology of the third wave. Third wave production is automated and cybernated, making it possible to revolutionize hierarchy and democratize access to information. It rests on a sustainable technology, which diversifies production and accelerates the generation of knowledge. In effect, it is a new economic base, which develops its own principles of society and culture making a sustainable and democratic socialism workable. In fact, post-industrial, third wave socialism may be the only socialism truly possible.

## **Our Vision**

Our vision for making this transition is first of all centered on a vision of the renewal of democracy. We see democracy not only as a political and ethical value. It is deeply connected to the development of a progressive and scientific economics as well.

Any economic program worthy of being called popular and democratic, let alone socialist, must meet the standards of ecological sustainability. Any economic program that attempts to serve the present through the unrestricted looting of the resources of future generations can only be called reactionary and dooms us to strategic failure. It also opposes the basic principles espoused by Marx and Engels in the Communist Manifesto, where they insisted that communists distinguish themselves by taking care of the future within the movement of the present and by affirming the unity of the workers and democratic forces of all countries above any particular national or sectoral interest. In this sense, the founders of scientific socialism were the forerunners of the "Think Globally, Act Locally" slogan embraced by today's Greens.

But sustainable economics in today's world requires ongoing advances in science and technology. Science in turn both embodies and requires free and open inquiry, a democratic civil society affirming tolerance and respect for diversity. Under theocratic domination--whether of the medieval, fascist or secular Stalinist- Maoist varieties--scientific progress is stifled.

## **Democracy, Education and Science: The Key To The Politics of the Third Wave**

Without democracy, there is no science. Without science, there will be no sustainable technology and economic life. And without sustainable economics, there is no socialism worthy of the name. Scientific inquiry is inherently democratic. It is the open investigation into life and its environment in which knowledge is true or false not because of the declarations of powerful authorities, but because statements can be validated or invalidated as fact by anyone.

Of course, there are powerful scientific elites, which protect the interest of the ruling class. But they are not only anti-democratic they are anti-scientific as well. Their willingness to support the aims of the highest bidder compels them to restrict challenges to established views. It thus impedes the growth of objectivity, and represses democratic debate and investigation. Because of the information revolution, third wave society will undergo a decentralization of mass industrial patterns. The only path in which the new productive forces can be fully used is one where information is shared through universal education and open scientific discussion. Capitalism's tendency, however, is to own and restrict information, thus increasing the stratification of society and corrupting the liberating potential of the post- industrial world.

Third wave socialist democracy requires a radical restructuring of educational and cultural life. Every citizen needs access to the growing wealth of knowledge in order to pursue their own interests and to enrich the common good. To flourish, such a democracy must affirm opportunities for diversity, since expanded access to knowledge rests upon the empowerment of all races, nationalities and social strata. Multiculturalism is thus a natural component of the third wave, but it can develop best within a socialist and democratic framework.

"Life Long Learning"--the provision of ongoing, affordable, high quality educational resources for people of all ages--is essential to third wave democracy. In a society in which information-rich processes are the key mode of production, access to knowledge is the key to equality. Moreover, the full creative force of society can only be realized through education. The revolutionary use of



information in all spheres of life; the expansion of art, science and leisure; the discovery of new knowledge and the saving of the ecosphere--all these challenges of the future require democratic access to knowledge. Lifelong learning, in and out of the classroom, is a condition of survival in the short run and liberation in the long run.

In a third wave socialism, all of society would be involved in scientific debate. Many scientific issues--such as pollution, reproductive rights, or the effect of drugs or chemicals on people--affect everyone in their daily life. By organizing a continuous platform for open investigation and debate, the institutions of science will become stronger, as will the institutions of democracy.

Of course not all issues concern all people equally. But the radical restructuring of education will provide the channels of access for all people to participate in the public discussions that concern or interest them, including scientific discussion. This will strengthen their democratic impulse to participate effectively and fully in societal decision-making. By respecting and drawing on practical life experience coupled with scientific education, all of our institutions can become more open and democratic.

We favor the form of democracy where sovereignty resides in the people themselves. This means no class, party or state institution or social grouping has an unrestricted or unlimited power that can stand over and against the will of the people. Given the vast inequalities of wealth, power and privilege, democracy in this sense is still mainly a goal to be won and established, even in the countries calling themselves democracies.

We agree with the theory that the state throughout history has never been a neutral institution, but an instrument of the dominant classes. The over centralized state power of second wave industrialism especially must be broken up and radically reconstructed if a new popular government is to serve the needs of empowering a new coalition of those previously excluded from government. A participatory democracy of this type, we believe, draws upon the best of the Marxist tradition with American radical tradition of John Dewey and W.E.B. DuBois.

But under a socialist democracy of the third wave, centralization is scaled downward while communications are vastly enhanced. Participation becomes more practical; more power will be decentralized and directly elected officials will run more institutions. Institutions relating to the administration of justice, the care of the environment, the maintenance of universal health care, the upkeep of the educational infrastructure and the control of the police--all these processes can come under the greater supervision of the citizenry.

A healthy and sustainable democracy is therefore one where the people have the power and ability to participate in the decisions that affect their lives. To be practical, socialist democracy thus must not only recognize each individual's democratic rights, but also the rights of groups of individuals that have been excluded from participation and singled out for oppression over the years--oppressed nationalities, racial and religious minorities, women, gays and lesbians, and others. For the oppressed nationalities, this means political power and self-determination in their areas of concentration.

In this way, socialist democracy means that the legacy of oppression, both past and present, can be worked out explicitly through social policies and grass-roots empowerment, rather than resolved as a mystical or automatic outcome of formal or legal equality. Socialist democracy thus values not only each individual, but takes into account each individual's social identity as well.

## **Economic Features of Third Wave Socialism:**

### ***The Democratic Alienation of Control from Ownership***

A sustainable and dynamic socialist economy will depend on two key features: first, the separation of ownership of capital from the control of capital and second, and the guided use of markets for the distribution of capital, goods and services.

We acknowledge that this is not an orthodox statement. Marx defined capitalism as the economic system that was driven by the alienation of labor from capital. In other words, the people that created wealth did not own the means of creating it. Previous socialists held that the solution was to unite labor and capital under the control of labor. We believe this view has failed.

We want to argue for a new viewpoint. We see socialism as the economic system that alienates the ownership of capital from its control. Capital is a social pattern of value. Since it is collectively produced and depends on the organization of society for its effective use, it is reasonable to limit what individual, private owners can do with capital. This is not a necessarily a new idea; both eminent domain and product liability laws are based on this notion.

The common view of ownership is that it is an institution of power. If I own something, I have decisive power over that object. I should be able to do with it what I want. This can cause problems, since many of the things that can be owned can also be used in ways that society must restrict. One example is product liability law. If I produce and market a product, which is later shown to be harmful to my customers, I can be held responsible for the damages and forced to compensate the victims.

In bourgeois society, individual liberty and the private ownership of property are the fundamental values. Prior to the bourgeois revolution, most power and wealth belonged to the church and the throne. Individual privacy, to the extent that it could be defined at all, was wholly subordinate to autocracy and theocracy. The rising bourgeoisie had to assert the primacy of private property into order secure the wealth it was amassing through the slave trade, manufacture and the looting of the new world. It wanted to multiply this wealth by recycling it as capital and thus liberating the productive forces from the restrictions of medieval or despotic society. Private property in this sense was a revolutionary force undermining the old order.

While this view of private property has some historical justification, the concept of a formal private ownership that takes precedence over social obligation does not. The latter is based on the myth that society has little or nothing to do with the production of wealth, i.e. all millionaires are supposedly "self-made men" who got their wealth "the old-fashioned way, by earning it."

But no one is self-made. It is our social being that makes our private selves possible. All of us benefit from and contribute to society and its institutions. The large variations in wealth among individuals are not due to inherent differences between individuals. At best, the differences are rooted in the various ways individuals are able to access and use society's resources. At worse, the differences are wholly arbitrary; they are accidents of birth, or war, or theft.

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. At the same time, we fundamentally reorder priorities in how both property and capital is defined. While both personal property and capital may still be owned by individuals. we no

longer see ownership as an absolute power. Property, especially productive property in the form of capital, is to be seen primarily as a social power relation that can be guided and regulated, just as other power relations are regulated for the common good of society. Incomes are also subject to progressive taxation.

From this perspective, when a person dies, his or her socially productive wealth returns to the social commonwealth. The inheritance rights of one's offspring would be confined to a set limit, say, \$1 million per child. Of course, contrary to any right-wing hysterics, we are not talking about family homes, or heirlooms, or personal belongings, or any situation where persons would not even own the shirt on their backs.

As we see socialism, the social control of capital takes precedence over the rights of ownership of capital. In doing so, distinctions will be made first of all between individual property and capital. Individual property is owned by an individual for his or her own benefit (or family or friends), not as a direct agent for the production of wealth by employing others. Property becomes capital when it is used for the production of wealth by exploiting labor power.

Individual property needs to be reasonably protected. But capital needs to be invested profitably in those areas that benefit society and sustain the ecosphere. Laws and regulations are among the tools that a government of radical reconstruction can use to achieve these goals without "nationalizing" or "statizing" the ownership of capital itself. In particular, tax laws can be created to punish capital invested in unproductive speculation, or in production processes that pollute the environment, or in factories that prevent unionization. At the same time, other enterprises that offer or create societal benefits--such as new environmentally beneficial technologies--may not be taxed at all for a set period. Finally, some forms of capital investment--such as schools, research centers and infrastructure--will be publicly owned.

Our goal here is sustainable economics that is both dynamic and innovative. Under third wave socialism, the laws governing economic transactions first of all will be geared to sustain and improve the health of society and the environment. Power relations that are in harmony with this direction will be reinforced. Power relations that go against this direction will be retarded.

In this context, 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. We will go further: we don't think there are or will be stable economies without markets, except for small tribal hunter-gatherer societies or religious communities like the Amish. Wherever a "command" economy was established on a larger scale, an unofficial "black" market quickly asserted itself as the only efficient way of getting things done.

But we also believe there is no such thing as a "free" market--all markets operate in uneven fields of power that have an impact on transactions between buyer and seller. Nor is a "free" market necessarily desirable, since unrestrained market forces can be tremendously destructive to both social and biological values.

Markets where the fields of power are guided by intelligence, however, can be a dynamic and creative force. But using market laws to direct the economy toward sustainability will never be easy. This is why political democracy is so critical. When new problems arise, laws must be changed or created to reflect new circumstances. These laws need to be crafted democratically so that everyone

can have an impact on the direction of the market, rather than just a narrow elite that directs the market for its own exclusive benefit.

## **Considerations for a New Strategy and Tactics**

Where do we go from here? The road forward is not in the direction of old ideas about social and political equality but toward new ones based on the realities of the third wave. This in turn requires fresh answers to the fundamental question of strategy and tactics: Who are our friends, who are our enemies?

We believe these questions must be answered anew from the perspective of the third wave's impact. We offer only a bare outline of the factors to consider.

The third wave has caused splits both in the labor movement and in the ruling classes. Among the capitalists, those trying to create the new information based economy are often in conflict with those that are trying to keep the old industrial beast alive. Among the workers, the situation is more complex. Some high-tech workers have great hope for the third wave but are dubious that those in power now will ever allow for change that is democratic or ecologically sound. Some blue-collar workers fear for the future and fight to retain old ways, regardless of the consequences to society or the environment. Finally some under skilled or untrained workers have been driven from their jobs or excluded from employment altogether: Their efforts to keep hope alive are often overwhelmed by despair.

Socialists must find new ways for uniting the many to oppose the few. While seeking the unity of the entire working class, we think two sectors are crucial: first, the main victims of the transition to third wave, those excluded from production or at risk of exclusion; second, those engaged in third wave production. The starting point to rally the forces for change to a new society is to take a stand among those with the least stake in the old order.

This means we place the survival problems of the urban poor, people of color and displaced workers at the top of our list of priorities. But we also take up the social priorities and concerns of the progressive wing of the third wave workers. These include ecology, disarmament, peace and human rights issues, and expanded access to information and education.

This is not always the perspective of organized labor. Crucial sectors of its leadership have always been hamstrung by the prevalence of undemocratic, racist and shortsighted environmental views. The racism in white labor and white society generally also continues to do its damage. As long as racism goes unchallenged in any sector, it will continue to keep workers ineffective in the pursuit of their own self-interests, as well as blocking all attempts to unite all progressive democratic forces for change.

Finally, we do not see this way of making distinctions among the people--their relation to the third wave--as replacing or liquidating earlier conclusions drawn by our movement on the centrality of the national question, racism or sexism. Nor do we believe that third wave workers are "the vanguard" while all others are secondary and subordinate. These rigid schematics are part of the old thinking that we want to challenge.

But we are arguing for genuine strategic thinking, an analysis that proceeds from a global perspective and takes the whole of society into account. The main battleground in this sense is the North-South conflict, i.e., the growing and desperate inequality among the world's nations, countries and peoples. This can no longer be a side issue for the workers movement or other social movements of the West.

We think it is ludicrous that the multinational corporations are the internationalists, while organized labor and the left remain trapped in nationalist conceptions.

The globalization of the market is daily driving home the lesson that this question must be placed at the top of labor's agenda. Runaway shops can only be fought strategically by raising the living standards, wages and level of organization among the peoples of the impoverished areas of the world. In the past, trade unions at best dealt with this issue superficially--a resolution was passed, a sympathetic article was written in the labor press. At worst, the top union leadership for decades collaborated with the CIA in destroying progressive labor organizations in the third world. Now the chickens are coming home to roost. A complete reversal of these policies is required for the very survival of the American trade union movement itself.

As for the divisions within the ruling class, high technology entrepreneurs are looking to break away from the old military industrial complex. They hope to make more profits by exploiting the application of environmental and computer technology in the global marketplace, rather than by remaining addicted to the inflated contracts of old, slow-moving, nationally-dominated (and nationally limited) military establishments. They need a vast expansion of education, research and development resources, as well as new infrastructure.

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. 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 of the lower-skilled, female and nonwhite sectors of their labor force.

## **Conclusion**

The advent of the third wave does not mean the end of class struggle. But it does mean that the terrain on which class battles are waged has dramatically shifted. We are in a new environment and on the threshold of a new age. The outcome is not predestined; we can face a grim future of "Bladerunner" societies in the North and Somalia-type disasters in the South. Or we can emancipate our thinking and mobilize our forces to reconstruct society into an ecotopia with liberatory features still beyond our imaginations. The choices are ours, but the time is shorter than we think.

*The Chicago Third Wave Study Group was initiated by the three authors--Carl Davidson, Ivan Handler and Jerry Harris--to produce this document for the discussion on goals and principles taking place in the Committees of Correspondence.*

*The CoC debate is leading up to a founding convention of a new organization of the American left in the summer of 1994. The Authors invite comments and criticisms. People in agreement with the perspective in the paper are also invited to join the study group. E-Mail can be sent to Carl Davidson (democracynet@worldnet.att.net). Second-wave communicators can write to Carl Davidson, Networking for Democracy, 3411 W Diversey, Suite 1, Chicago IL 60647. Fax: 312-384-3904.*

# Using FaxModems and E-Mail as Tools of Social Change

By Carl Davidson  
Networking for Democracy

Faxmodems, E-mail, LANS, BBS conferencing--all the high-tech buzzwords of modern telecommunications can sound very intimidating and alienating to the average union organizer or neighborhood activist working to save their jobs or protect the local environment.

Yet communicating with other people is the heart of what organizing is all about. In modern society, it's a complex task that has grown far beyond the ability of speaking and listening well. The skills we learn in making the best use of a wide variety of tools for communicating can often spell the difference between success and failure, victory and defeat.

Just think about trying to launch a campaign today without the telephone, mailing labels or a Xerox machine. These devices have only become widely in the last three or four decades. When they first appeared, they seemed almost magical. But now, learning to use them is no big mystery and operating them seems as natural as breathing in and breathing out.

In the same way, there is no inherent reason why we should look at today's new tools negatively. With a little training and practice, anyone willing to make the effort can learn to use the basic instruments of telecommunications. Learning to drive a car, especially in a big city, is probably more complicated and difficult; yet almost all of us managed to do it because the rewards were great.

For an organizer, the rewards of combining computers with telephones are far greater. Instead of being limited to voice messages, your phone line can now be used to transmit the text and graphics files generated by computers. That means entire documents-- newsletters, position papers, grant proposals, agendas, mailing lists, leaflet designs, press packets, even photographs--can be sent or received by any location with a telephone jack and a computer.

Some might object that you can do the same thing now for the price of a postage stamp, and it goes anywhere the post office will take it. Yes, and it's also true that a horse-drawn carriage can take you anywhere a car will, and then to some that a car won't. But the big difference between electronic mail and the regular mail--or, to use the lingo, between "E-mail" and "Snail-mail"--is a vast savings in time and energy.

E-mail travels at close to the speed of light. Depending on the lines and services used, it can be delivered anywhere in the world in a matter of minutes or hours. But the speed of delivery, while attractive, is not necessarily the most important feature of this new method of communication. Of greater significance is the form of the messages.

E-Mail arrives as text or graphics files that can be read by your computer. If it's a draft of an article or position paper, you can immediately begin editing it or changing its size of appearance for publication in your local newsletter without having to re-type the whole thing. If it's a memo for collective discussion, you can add your comments and pass it on immediately to someone in another city. If it's a mailing list, you can print all or some of the labels without having to re-type the names and addresses over again. If it's a leaflet layout, you can make changes in the design or replace lines without having to cut and paste.

While these benefits of E-mail are immediate and apparent, the early obstacle to its wider use was the relative difficulty in making the connection between the two computers over the phone lines. To someone with a little knowledge about baud rates, serial ports and communications software, it was easy to do if there was someone with the same knowledge at the computer on the other end at the same time, ready to "synchronize your watches," so to speak. But since this is rarely the case in our kind of low budget, non-profit offices, the potential for using E-mail often remained dormant, even if the equipment was available.

Today this obstacle is easily overcome. The solution is to subscribe to an on-line computer networking and conferencing service such as PeaceNet.

What exactly is PeaceNet? Start by thinking of it as the electronic equivalent of renting a mailbox at your local post office. But unlike the post office, your E-mail box at PeaceNet is "on-line." First, that means you don't have to go there to check or pick up your mail; you dial up your box with your phone and computer. If there's something in the box, you can simply read it on your computer screen or "capture" and "download" it to the disk drive on your computer. Second, being "on-line" usually means being available 24 hours a day, seven days a week. Unlike Snail-mail PO Boxes, you can get into your E-mail box at any time, day or night, as often as you like, without leaving your office.

Who can put mail into your PeaceNet E-mail box? First, any of the 10,000 or so progressive activists who are also Peacenet subscribers. From within PeaceNet, it's easy and quick. They can send any computer file to my E-mail address, which, in my case, is "cdavidson." If someone isn't a PeaceNet subscriber, but uses another network, such as the InterNet, which links faculty and students at almost all universities, it can still be done but it may take a few hours. An InterNet user can still reach me by using a longer address, again in my case, "cdavidson@igc.org." This tells the InterNet to connect itself to PeaceNet through a "gateway" called "igc.org" as soon as it can, and then put the mail in my box.

The bottom line of all this for us: you no longer need two computer nerds in two offices working at the same time to link up two computers over the phone lines, synchronizing their ability to exchange data, each and every time you want to send stuff back and forth between them. Instead, you only have to set up the office computer's ability to call into PeaceNet once; in doing so, you automate the procedure down to a few simple keystroke combinations. Thereafter, just about anyone can use the computer to call in--the lingo is "logging on"--and then pickup their E-mail or send E-mail to someone in another office.

The person you're sending to doesn't have to be "logged on" to PeaceNet at the time or even in their office; the mail will stay in their box until they check it and take it out. If it's an urgent matter, then you simply call them up on the old-style voice phone and tell them to check their E-mail box as soon as they can for the stuff you sent them.

If all this sounds great, hang on to your hat. PeaceNet is much more than a glorified electronic postal system; while important, E-mail is only a minor part of its services.

PeaceNet also provides electronic conferencing. Think of this as going to your local post office and renting not only a mailbox, but also a conference room. Not only does your conference room have a table, chairs and a blackboard and bulletin board. It also comes equipped with file cabinets, phones, and newswires and fax machines. The file cabinets are full of useful information; the fax machines are pre-loaded with the fax numbers of the major national media and every member of Congress.

Now think of your post office as housing not one conference room, but 500 of them. In each room a series of presentations is going on around a different topic related to social change. In some rooms, it's one speaker after another droning on in an unrelated fashion. But in others, the discussion is lively, with much discussion and debate. In some, the top is so hot and so many people want to get in on it that the group breaks up into smaller sub- topics in other rooms.

With PeaceNet, you can bounce around from one room to another, just listening in. Or you can get into the discussion yourself. Or you can note the names of the speakers and talk with them privately outside the room.

If your group wants to obtain a PeaceNet conference room to publicize and get a response to its own ideas, it's possible to set one up. It's also possible to get a "private conference." This means that the only people allowed in are those on a list of E-mail names supplied to PeaceNet ahead of time. The editorial boards of various publications whose editors are scattered around the country, for example, often use private conferences. In this way, they can read, debate, criticize or reject articles without having to all be in the same place at the same time. In fact, one way to look at such a conference is as a "perpetual meeting" that goes on 24 hours a day, 365 days a year. Each individual in the meeting, however, can come and go as he or she pleases. In addition, there is a complete written record of everything said that anyone can respond to at any time without waiting for the chair to call on them.

All of this has immense practical use, especially for progressive groups trying to work together over long distances or even in a local area where scheduling is difficult. It also has many revolutionary implications for theories of democratic organization, especially in the sphere of flattening leadership hierarchies and empowering individuals and groups at the base.

One of the most democratic features of PeaceNet, finally, is its low cost. There is a \$15 initial sign-up fee. After that, it's \$10 a month, which includes one hour of access time per month. It usually takes less than five minutes to check and get your mail, or send mail to someone else. After the first hour each month, your access time is billed a \$5 per hour at night or \$10 per hour during the day. Over a year, a small office using mainly the E-mail services can figure an average of \$20 per month. The phone call to log on is simply the price of a local call, even if your sending mail to someone in Australia. It's a bargain no matter how you look at it.

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# **Building Organizations via Electronic Conferencing**

By Jillaine Smith  
PeaceNet

Computer conferencing is ideal for any organization that currently has the need for conventional meetings or conferences. It is particularly valuable where an organization's staff is located in different cities, or where staff is in field offices or constantly traveling. It overcomes the difficulties of distance that often make management and communication difficult.

With Computer Conferencing, participants are able to carry out their normal daily routine and take part at a time that best suits, or is most relevant to them. Deadlines are still met -- each participant is fully brought up to date with the activities of all other participants every time they participate.

According to an article in *Management Review* (August 1989), most companies that use computer conferencing report travel costs are cut 50-to-75 percent because of the significant reduction in the number of face-to-face meetings. Savings on project development can run as high as 90 percent.

And savings on telephone bills are often in the 10-to-35 percent range, since electronic communication is more succinct, can be done in off-peak hours and eliminates telephone tag.'

## **Instead of Face-to-Face Meetings**

Computer Conferencing has a number of advantages over physical meetings or conference calls. Convenience is the most obvious benefit with the added bonus of huge cost savings. Examples of both include:

- No money and time spent on travel and accommodations
- No expensive venues
- No jet lag
- More time for consideration and deliberation
- Opportunity to involve more people
- A broader and more democratic process
- No coordinating of time schedules
- No time zone restrictions (phone calls)
- More time for reflecting on comments made and responses to them
- The process of writing is a powerful tool for organizing one's thoughts
- Fewer 'heat-of-the-moment' responses
- Less domination by one or more personalities
- A written record of the dialogue is created.

We don't assume computer conferencing will replace physical meetings. When the latter are required, however, Computer Conferencing can enhance meetings in several ways. For example:

- Plan the agenda. Unplanned and unfacilitated meetings are usually unsatisfying, while a good agenda makes for a successful meeting. Computer conferences are ideal settings for fine-tuning agendas; they can be discussed, modified and often many issues can be resolved before the meeting has even begun!

EXAMPLE: The meeting facilitator or chair posts a proposed agenda as a new topic. Participants add comments as responses. The facilitator collects the responses and posts a revised agenda as the final response prior to the actual meeting.

- Assign research projects. As a result of agenda settings, research topics often come up. Perhaps someone needs to be contacted for certain information. If this didn't come up until the meeting, much time would have been wasted.

EXAMPLE: A topic can be assigned to the person responsible, who then posts updates as responses.

- Review Materials Prior to Meetings. Informed decision-making requires familiarity with a variety of materials. How often have you been at a meeting where you didn't get the materials until the last minute-- hurriedly put together and passed around at the beginning of the meeting! Sharing materials online prior to a meeting avoids expensive printing costs (and time!) and allows decision-makers and participants to familiarize themselves with relevant issues in advance.

In summary, computer conferencing can improve face-to-face meetings by providing forums for better planning and preparation.

### **Instead of Electronic Mail**

While electronic mail has increased the pace of communications, it has limitations in that email messages are inherently unorganized and provide no structure for discussion. In addition, exchange of email among a group of people can inadvertently leave out a necessary individual.

Conferencing discussions can proceed faster than email since the delay induced by a serial sequence of messages and responses does not exist. Conference information is organized by topics; new topics are easy to create, and responses can be appended to any topic. All topics and responses are available for review by any participant, and because all messages are automatically labeled with time and date, development of the discussion is easy to follow.

# Surfing the Internet: A Political Guide for Beginners

By Sam Kritikos  
Chicago Third Wave Study Group

Are you the kind of person that is interested in progressive politics and enjoys a good conversation?

Do you find that some of your friends just do not have enough time to exchange ideas over coffee?

Well, take courage because there is help over the Internet! The electronic superhighway is here to stay and it offers many opportunities for contact with like-minded people from all over the world.

Of course communicating on the Internet is not the same as actually meeting someone--the warmth of human presence, the magic of the dialectic over a teacup is not there. But participating in a discussion over the net is better than intellectual isolation and compromise, and in some respects it even advances over actual conversation!

For people not experienced in the Internet all that probably sounds confusing and implausible. I can hear strong voices from the back of the room: "What exactly are you talking about?" they ask.

The Internet refers to an international electronic network that connects computers over long distances, and so it also connects the people that use them. In the last year or so the Internet have hit the public conscience with a vengeance. It seems that everywhere you look there are books that try help to learn how to get connected. So assuming that you are a new user, what we are trying to do here is to provide some basic information that might make your net experience more enjoyable. We would like to think that if you have never logged in, what follows would entice you to get a connection from a local provider.

Actually "connection" is an ambiguous term, because there are many types of connections. For example many people only have access to electronic mail (email), i.e. they can send messages through the net to other people who are also connected. Email is of course a very powerful way of personal expression, but it is restricted to only two people and to the subjects they find interesting in common. The particular kind of service we are going to examine here, though, is the USENET newsgroups.

Every newsgroup is like a bulletin board on which people can post messages, except that in this case we have electronic messages. If you find something interesting, you can just respond to it, by posting your message commenting on it. Believe it or not there are thousands of discussions groups on the USENET. It is difficult to be sure for the exact number because almost every day new groups are formed, and old ones are dissolved when interest in their subject has fallen. Roughly though there are more than 7000 groups on the USENET, ranging from groups dedicated to computers, to political and cultural issues. Before we discuss some of them a word about their names.

Newsgroups of similar content come together in groups called hierarchies. Every name of a newsgroup is a series of strings of characters separated by dots. The string that denotes the hierarchy comes first. For example a discussion group dedicated to the discussion of beer has the name:

alt.beer

In this case "alt" for alternative, the name of the hierarchy in which this group belongs. Some of the more popular hierarchies include:

comp for computer subjects  
sci for discussion of scientific subjects  
rec for recreational subjects, hobbies etc.

As in many other areas in the Internet, there is a flexibility in the process of name selection. For example we do not know exactly why beer was put in the "alt" hierarchy and not in the "rec" one. We certainly find newsgroups such as:

rec.food.drink rec.food.recipes ...

in the "rec" hierarchy. Whatever the reason a particular the name might be, the name chosen for a group is supposed to reflect the content of the discussion. That is easier said than done, consider for example the following two groups:

alt.activism alt.activism.d

which on the face of it they look almost the same. Somewhere along the line someone proposed the second group, and after the appropriate discussion and required voting, the second group came to be. We looked up the descriptions and they both talk about radical political and environmental activism. The mystery of the two names aside, the content and subject of the discussions is similar. Here is a small recent sample from alt.activism.d.

Subject: Re: Justice in onion fields Date: 15 Apr 1994 17:33:30 GMT

These union demands seem reasonable to me. Especially the part about the effect of heavy containers on inducing back problems. It would have been better if the article had said how much these workers make.

--

He who refuses to do arithmetic is doomed to talk nonsense.

One of the things to notice here is that on the subject line we see the string: "Re". That denotes a response to somebody's previous posting whose subject was "Justice in onion fields". Another recent posting:

From: Subject: Re: Men's Rights Movement Date: 14 May 1994 20:23:50 GMT  
writes:

>>I'd rather rise above the feminists and show that people in the men's  
>>movement (and anti-feminist movement) can say something nice about  
>>women. Women are not the enemy, feminists are.  
>you imply in that first sentence that feminists have only bad things to  
>say about men. that simply isn't true -- for me or for many of the  
>feminists i either know personally or read. if i make a statement about  
>women being discriminated against or otherwise disadvantaged because of ... I don't  
think you two are talking about the same kind of feminism. You don't seem like the  
more common type that say that all sex is rape even in marriage and marriage should  
be banned and all men are evil... ..

The interesting thing to notice here is that the response by Name-1 includes the text of the message that prompted the posting. The text of the previous message has in the start of each line the character ">". Notice some of the lines begin with ">>", and that is because Name-1 responded to Name-2, who responded to Name-3! This is one of the points that justifies the talk about the Internet creating a community, fostering relationships, and taking us beyond the limitations of email.

Another interesting group is the one dedicated to the discussion of the political views of Noam Chomsky: alt.fan.noam-chomsky. Prof. Chomsky, a prolific writer with strong views, not surprisingly generates a lot of heated discussion. Here is representative recent sample:

From: Subject: conspiracy in the media? NOT! Date: 19 May 1994 08:48:15 GMT  
... And while I sincerely believe Noam Chomsky's advocacy that the U.S. government purposely prevents any true democracy in countries that it wishes to control, I find his theory regarding media conspiracy takes things just a little to far.

While his evidence is overwhelming, I draw a different conclusion; If in fact there is a group of individuals who are conspiring to keep the masses ignorant, then they have done a masterful job, and they have done it in such a way as to not require any direct conspiracy inside the news media. Our whole society is designed to bring us up from the time we are...

Not surprisingly there were many responses, and one of them read:

From: Subject: Re: conspiracy in the media? NOT! Date: 20 May 1994 11:50:58 +0100

In article writes:

>It seems that one of the central points in Noam Chomsky's arguments is  
>that a select group of the privileged conspire to keep the masses  
>complacent through ignorance; by controlling the news media, and in fact all  
>media.

I hate to be one of those who 'say what Chomsky says' (why can't he post here - he has an account at MIT?) but I don't think, from all the interviews I've seen with him and the books I've read, that he claims there is some sort of 'organized conspiracy controlled directly'. What he does suggest is that the social forces at work in the media, through job selection, peer pressure, commercial pressure from the business owners and advertisers, work together to create a 'consensus' that consists of:

- uncritical acceptance of US Corporations and their policies - labeling of contrary or alternative views as 'extreme', etc, or ignoring them
- marketing of the current highly exploitative and oppressive global system as 'democratic', 'free' and 'American'
- generation and selling of agreed 'views' on world crises to the exclusion of more humane viewpoints, ie that the Gulf War was Good and Necessary (even though the US encouraged Saddam to take Kuwait through secret diplomatic maneuvers) or that Chomsky is 'sick', 'an extremist' or the at all nations want and desire 'free-market' economies, etc

This 'consensus' could easily look to an alien as 'though it is the result of organized propaganda work, but the US and Western media have reached a far greater level of sophistication than that of Goebbels

or Stalin; they no longer need to appear directly oppressive in suppressing alternate views and many of the people who work in the media may themselves believe they are part of a healthy, functioning informative society. The pressure is insidious and subtle, but it is there. That's why, at the end of the day, we are getting the same `received wisdom' and `analysis' from CNN, CBS, etc, etc, etc a d nauseam. ...

As far as we know Prof. Chomsky does not participate in these conversations, if he does he does not do so very often. The purpose of including these excerpts was to entice you to taste these groups, or if you are not yet connected to get connected soon! But the above groups are not the only ones.

There is a tremendous variety of groups and a good start would be (including the above) to subscribe to the following:

alt.activism.d alt.discrimination alt.fan.noam-chomsky alt.politics.clinton alt.politics.correct  
alt.politics.economics alt.politics.radical-left alt.politics.reform

What is political, and what is not, it is at times difficult to specify. Being interested in politics should not mean though that you stay away from an informed position about issues concerning technology, and culture. A good start in that direction are the following groups:

alt.politics.datahighway alt.privacy alt.culture.internet alt.wired .

The last group is dedicated in the discussion of articles and subjects in the Wired magazine. Wired, a monthly magazine, focuses on the Internet, and new technology and their impact on society.

We could go on for some time talking about the USENET groups, but pretty much you have a flavor of what goes on in them. It is time for you to make your stand and experiment by subscribing to at least some of them. The dozen groups recommended above are but a start. With time and experience you will find the groups that are close to your interests. Happy surfing!

## **Book Review:**

### **The Ecology of Commerce**

**By Paul Hawken**

**Harper Business, New York City 1993**

**250 pages, \$23.00 US.**

By Ivan Handler

Networking for Democracy

Our world is in the midst of an environmental crisis. The biosphere is being destroyed, possibly irreversibly, by the demands placed on it by an industrial society flawed in its central components. Yet the same forces that created the problem, both the market and state intervention, are capable of providing solutions if intelligence can prevail over greed.

This is the core thesis of Paul Hawken's important new book, *The Ecology of Commerce*. The fact that the author has taken a market driven model as the centerpiece of his solution will give all ideologues on all points of the political spectrum the wrong idea. Hawken is not driven by ideology, but by a pragmatic approach combined with a deep sense of urgency. As he sees it, the market is a natural formation much like a mountain range or a tropical rain forest. Markets arise and function as a result of the forces that make them up. Markets do not initiate anything in or of themselves. Any solutions to problems caused by business will of necessity utilize the marketplace.

In his preface, Hawken offers eight objectives he feels must be met to solve the environmental crisis:

- "Reduce absolute consumption of energy and natural resources in the North by 80 percent within the next half century."
- "Provide secure, stable, and meaningful employment for people everywhere."
- "Be self-actuating as opposed to regulated or morally mandated."
- "Honor market principles."
- "Be more rewarding than our present way of life."
- "Exceed sustainability by restoring degraded habitats and ecosystems to their fullest biological capacity."
- "Rely on current income."
- "Be fun and engaging, and strive for an aesthetic outcome."

Hawken starts by making it clear that not only is business the problem, it must also become the solution. He reformulates the question of "How do we save the environment?" into "How do we save business?" After laying out the depth of the environmental crisis, he contrasts the ideas of immature and mature ecological systems, stating that our world economy is best thought of as an immature ecological system -- one that grows fast and does not do a good job of recycling its wastes. The chapter titled "The Death of Birth" refers to the enormous extinction rate now occurring and explains the fearful consequences of exceeding the carrying capacity of the biosphere. Here as with the rest of the book, Hawken attempts to bridge the gap between environmentalists and business people by

pointing out that finding a solution to this crisis is in everyone's interest. Good environmental policy, in other words, is also optimal business policy. However, Hawken also insists that structure of the world's industrial economy is what pits business against the environment. Changing this structure is really what this book is about.

In Chapter 3, Hawken exposes the legacy of industrial waste, especially non-degradable toxic waste. He takes on the fallacy that the solution to today's problems is better clean up programs:

"Industry's only answer is to clean it all up -- or to try to. But what does that mean? How do you throw away a toxic molecule? To celebrate the environmental clean-up sector of the economy as a 'growth industry,' is worse than ignorant. We might as well celebrate cancer treatment as a growth industry, rather than take cancer epidemics as a warning about the hundreds of toxic chemicals loosed in the environment. Business must add value to the economy and the society in order to make a positive contribution. 'Environmental' companies that limit the damage done to the environment and to human beings by other companies, strictly speaking, do not add value. Reducing the harm caused by 'growth' is a self-cancelling contribution at best, no more a factor in real economic growth than the rescue of a man who has been thrown overboard is an act of mercy."

Hawken puts human economics in context. He goes back to the concept of ecological succession--where an immature ecology becomes a mature ecology--and calls for "commercial succession" whereby our world industrial economy can become a mature ecosystem. The use of ecological concepts here is both welcome and innovative. All too often scientists attempt to reduce ecology to analogies in physics (even E.O. Wilson of Harvard is guilty of this and he is nothing if not an environmentalist). Hawken turns this around and uses ecology as the base model and measures our world economy against other ecosystems. This has the effect of subsuming economics as a specialized subset of ecology. This allows him to demonstrate over and over again how narrow and inefficient current business practices really are.

Hawken proposes changes so business will function in a restorative rather than a degrading mode toward the environment. He offers some positive and often intriguing examples--pollution permits, reusable containers and the elimination of non-degradable toxics from industrial processes. For example, laws could be passed so that corporations had to own whatever toxics or wastes they produced. These waste products could be chemically marked at a molecular level so they could always be easily identified. Then the corporation would be charged a yearly "parking fee" for the storage of these wastes. This would give industry good incentives not to use toxics in the first place or at least good incentive for figuring out how to break them down into reusable products. He summarizes: "In a restorative economy, the least expensive means of manufacturing a product should be the most environmentally benign and constructive means."

Taxation plays an important role in Hawken's analysis. He argues: "Markets are superb at setting prices, but incapable of recognizing costs." The idea here is that business has been given a free ride for centuries. It could exploit all of the natural resources of the planet, make a profit, and not have to bear any the negative costs of the result. The public thus not only provides the source of a business' profit by allowing access to the public commons in the form of nature, it also must pay--either through taxes or decreased health and welfare--for the damage business does to the environment in pursuit of that profit.



Hawken explains that the idea for "green taxes" did not start with him. In 1920, Nicolas Pigou, an English economist, proposed taxing businesses for environmental damages. This will provide incentives for business to produce things in an environmentally sound way and it will also give a competitive advantage to products that have a smaller impact on the environment.

But what can national taxation do in a world of multinationals? Here Hawken demonstrates that multinationals have quickly become the main factors in the world economy and in world politics. He explains how large corporations are on a positive feedback loop narrowly focused on the growth of their profits. Then he shows how the purpose of the GATT treaty is really to make it more efficient for multinationals to grow without encumbrance.

One of GATT's provisions, for example, is that countries with strong environmental regulations must not inhibit the import of products that violate their own laws! The point here is that "free trade" is just an empty phrase which really means that multinationals should be able to act in their own narrow interests independent from any national, regional or international laws. Furthermore, given the enormous power of these corporations, they have been accelerating the damage to the planet.

To set a context for his solutions, Hawken explores how the modern corporation evolved. In particular he is concerned about the relative lack of accountability and limited liability of modern corporations. He shows how in early American history, U.S. corporations were looked on suspiciously and their power was limited. One of the consequences of the civil war, however, was the lifting of many of these limits. For instance, interlocking directorates and the ability of a corporation to own a newspaper were allowed.

This has caused a number of ironies. One is that the First Amendment, which was created to promote the democratic exchange of ideas among citizens, is now used primarily to protect corporate control of the news media, despite its having decreased our democratic dialog from a flood to a small trickle. Corporations also regularly use lobbying, media campaigns, lies and corruption to control events. Hawken ends this line of criticism with this question: "It is interesting to note that the death penalty for individuals is less controversial than the mere suggestion that a few corporations may have forfeited their right to exist. How many people does a company have to harm before we question if it ought to exist?"

Hawken next defines what he means by a sustainable business. His guidelines mainly mean that the waste from one process needs to be the input for another process--and that all of these inputs and outputs should form closed loops. To require sustainability, he returns to "green taxes" to get the public and private interests back in line. As an example, he applies green taxes to energy and demonstrates how different tax structures can lead to completely different results:

"The EPA commissioned a study to examine the effects of a \$15/ton carbon tax rising 5 percent per year until the year 2010, and found that if the money were used to cut income taxes, it would reduce economic growth \$870 billion during that period, whereas if the money were used for investment tax credits, it would result in additional GNP growth of \$2.6 trillion."

Hawken summarizes with three principles:

- "Obey the waste equals food principle and entirely eliminate waste from our industrial production."
- "Change from an economy based on carbon to one based on hydrogen and sunshine."

- "Create systems of feedback and accountability that support and strengthen restorative behavior..."

I have two major criticisms to offer Hawken. One is that his analysis needs to be extended into the realm of social justice. The second is that he lacks a political analysis about how to accomplish his objectives. In the end he is left with moral persuasion as the major vehicle to effect change.

Human beings are clearly part of the human and world ecology. Among the hidden costs of industrial economies are their affects on the lives of working people. One of the enduring criticisms Karl Marx made of capitalism was its inability to provide full employment. Updating that point with Hawken's terminology would label capitalism today as an immature ecosystem and would require an ecologically mature (sustainable or restorative) economy to provide a secure living for all who work in it. Along the same line, institutional racism has created the social equivalent of a "labor toxic waste dump" with a large pool of permanently unemployable people whose lives are consigned to increasingly horrific levels of violence and depravity. Hawken only narrowly focuses on what has been traditionally delineated as the environment; he would be more consistent if social justice issues were treated more thoroughly with the same analysis.

Hawken's narrowness may reflect the traditional intellectual's alienation from industry. Going back at least as far as Emerson, this tradition partitions the world into "Nature" and "Man" and offers up the Earth as an object for Man to subdue. This framework clearly plays into the hands of the industrialists, as this book so ably shows. By subsuming all human enterprise under the ecology of the Earth, the alienation is overcome and new creative solutions become immediately available. It is ironic that Hawken, who really opens up this possibility, does not seem to fully understand its implications.

One of the nice effects of Hawken's formulation is the way it can be used to eliminate "laundry list coalitions," where all social justice and environmental issues are listed in some order as principles of unity. These coalitions have a terrible history of disunity, since their very definition creates huge opportunities for disagreement. But coalitions built around the concept of "ecological maturity" can unite all of these seemingly disparate issues under one roof in a very neat and elegant fashion--as long as the concept of ecology is seen in its most inclusive (and thus most realistic) context.

The book's other main problem is the lack of reference to a political program. Clearly this is not a valid critique of Hawken; he can't be required to do everything and he has done quite a bit as it is. Still none of the items that he proposes will be possible to implement without political change.

Hawken makes it clear that he sees large multinational corporations as the enemy and they are likely to resist change at every opportunity. That's why the changes Hawken is proposing are revolutionary in practice. As Hawken himself mentions several times, he wants to reinvent or change the whole structure of business. Structural changes on this order are always revolutionary, often violent and never easy. The current industrial interests are dangerous and will not change because of moral exhortations or even good ideas like the ones Hawken presents. The challenge for revolutionaries who unite with this program is to build those ties in ways that will sustain the movement through some very tough times.

*Ivan Handler is a mathematician and software integrator living in Chicago. He is the information systems director for Networking for Democracy, a Chicago-based cooperative assisting grassroots organizations with media and computer skills.*

## **Book Review:**

### **The Work of Nations**

**By Robert Reich**

**Vintage Press**

**New York City, 1992**

**340 Pages, \$12 Paperback**

By Carl Davidson

Networking for Democracy

Robert Reich's appointment as Secretary of Labor did not sit well with many lobbyists in Washington. Corporate interests were generally worried that he might be too liberal and "anti-market." Union officials, on the other hand, saw him as an elitist "free-trader" and "job exporter" detached from their concerns.

While there is some truth behind all these critical labels, they all miss the main point about Robert Reich. The most important thing about the new Secretary of Labor is the fresh perspective he brings to the vast restructuring of the labor market caused by the collapse of "smokestack" industries in the U.S. and the growth of industry in the third world.

Reich's views are clearly laid out in his latest book, *The Work of Nations*, which is both a futurist vision of the work force of the 21st Century and an old-fashioned polemic against "economic nationalism." Old-fashioned liberals and conservatives alike will find plenty to disagree with in its pages.

The book's main focus is on the U.S. crisis of de-industrialization and what to do about it. Unlike many liberals and union officials, Reich opposes tariffs and other restrictions on trade designed to "protect" American mass production from global competition. In his view, the shift of lesser skilled jobs to low-wage regions is a natural process that could even have positive results overall. But unlike many conservatives, Reich doesn't hold out much hope for the free market's ability to take up the slack by generating adequate high-skilled employment or high-wage incomes without substantial assistance from government.

So what does Reich propose? First, he argues for assessing the wealth of a society's economy in a different way: not by adding up what its business class owns, but by adding up what value its working class and small producers can impart to their products in the process of production. Actually, Reich's analysis here is quite old-fashioned. Like both Karl Marx and Adam Smith, he sees the dynamic economic value of a nation residing in the relative size, skill and productivity of its labor force. In fact, his book's title, *The Work of Nations*, is an implicit tribute to *The Wealth of Nations*, the 1776 classic of Adam Smith.

Reich begins by reviewing the history of the interplay between the American state and economy. He brings out a number of interesting points, especially on the historical importance of protectionism. For its first 150 years, for instance, the American market was far from a free market: until 1913, an average duty imposed on imported goods was as high as 50 percent. In the early 20th Century, he also shows how anti-trust legislation, intended to promote competition among these home-grown,

hot-house capitalists, in fact promoted the growth of large corporations that swallowed their competitors and restricted competition.

Massive corporations grew in tandem with the techniques of a mass production where products were standardized for a mass market. The mass market in turn required a mass culture of consumption. According to Reich:

"Americans took it as their patriotic duty to consume, and understood the purpose of the American economy as enabling them to do so. `Economic salvation, both national and personal, has nothing to do with pinching pennies,' declared a 1953 advertisement for Gimbels, the New York department store. `Economic survival depends on consumption. If you want to have more cake tomorrow, you have to eat more cake today. The more you consume, the more you'll have, quicker."

Mass production, however, had an important impact on the character of the work force. On one hand, American workers were more productive than ever; on the other hand, their skills had declined relative to their forerunners in the craft unions. Reich shows how the mass production industries today are still seeking out the low-wage, unskilled and semi-skilled work force. Only now they do it on a global scale, often finding it easier to export the factories rather than import the workers.

Here is where Reich raises a critical question. Does the future of the American economy reside in competing with the third world in order to retain relatively low skill and low wage manufacturing jobs within the borders of the U.S.? Reich doesn't believe there are any winners in this kind of competition: not American consumers, for whom protected trade means higher prices; not the unemployed in the third world, for whom fewer new factories means semi-starvation; not even, in the long run, for the unskilled in the U.S., who are losing their jobs to automated machinery anyway.

Protectionism in a global market, moreover, simply doesn't work anymore. Too many products and too many companies no longer have a distinct or single nationality. If one wants to buy a car made mainly by American labor, one would do better purchasing a Honda from Ohio than almost any Chrysler vehicle made anywhere. What is an "American" company, Reich asks, in a global web where by 1990 "Chrysler owned 12 percent of Mitsubishi...Ford owned 25 percent of Mazda...[and] General Motors bought more than 40 percent of Isuzu?"

Reich makes a convincing case that it is both impossible and reactionary to try to prevent the globalization of the market. Instead, he poses a strategic question: Rather than trying to prevent low-wage, low-skill jobs from leaving the U.S., why don't we try a policy that would encourage high-wage, high-skill jobs to come into the U.S., regardless of the nationalities of the investors? It's an important point--Reich identifies the process as shifting from "high volume" production to "high value" production. It is especially crucial, he adds, because new job creation is not going to come from the corporate giants of the past.

"America's 500 largest industrial companies," he explains, "failed to create a single net new job between 1975 and 1990, their share of the civilian labor force dropping from 17 percent to less than 10 percent. Meanwhile, after decades of decline, the number of people describing themselves as `self-employed' began to rise. And there has been an explosion in the number of new businesses." High value businesses, according to Reich, are those which: 1) solve problems by putting things together in unique ways, 2) help customers understand their needs and how to meet them with customized solutions, and 3) have the ability to link problem-identifiers with problem-solvers. While these criteria span a wide range of enterprises, Reich mainly means the design and engineering, research and development, education and communication, and marketing and management industries

In this context, Reich introduces the best-known features of his book: his description of the "three jobs of the future"--routine production services, in-person services, and symbolic-analytic services. The routine producers are a shrinking percentage of the work force: about 25% in 1990. Those working with metal products were mainly white and male; those working with fabric, circuit boards or information were mainly minority and female. This sector is in sharpest competition with workers in the third world.

The in-person servers are a growing sector; they comprised about 30 percent of the labor force in 1990. From fast food restaurants to nursing homes and janitorial service firms, they work alone or in small teams. The companies can be still be quite large: Beverly Enterprises, the nursing home giant, employs 115,000 workers, the same as Chrysler. Since they have to provide services "in person," they face little global competition. But since their work often requires a pleasant, nurturing demeanor, women predominate.

The symbolic analysts are a new and growing sector, but not nearly as large as the others. These are the university-trained "knowledge workers" who manipulate symbols for a living. They amounts to no than 20 percent at present; most are white males.

For reason he doesn't make clear, Reich intentional leaves out quite a few others types of work from this analysis. Excluded are all "resource extractors"--farmers, miners, forestry workers--and all government employees, including teachers. But the apples of his eye are the symbolic analysts, who he views as central to generating new wealth and new forms of wealth.

"In the high-value enterprise," Reich explains, "only one asset grows more valuable as it is used: the problem-solving, -identifying, and brokering skills of key people. Unlike machinery that gradually wears out, raw materials that become depleted, patents and copyrights that grow obsolete, and trademarks that lose their ability to comfort, the skills and insights that come from discovering new linkages between technologies and needs actually increase with practice....Human capital operates according to a different principle. Because people learn through practice, the value of what they do usually increases as they gain experience."

The Secretary of Labor is quick to point out that these workers did not pop up out of nowhere. Rather, they were largely the product of an industrial policy of the military type:

"Through the postwar era, the Pentagon has quietly been in charge of helping American corporations move ahead with technologies like jet engines, airframes, transistors, integrated circuits, new materials, lasers, and optic fibers. This tactic, however benign, industrial policy accelerated under the Reagan administration, as America's military buildup proceeded apace."

Reich is suggesting that if the country could benefit, even if only from secondary spin-offs, from an industrial policy driven by the Pentagon, why couldn't it do even better with an industrial policy driven by, say, the Department of Education. He state his central thesis succinctly:

"Government policy makers should be less interested in helping American-owned companies earn hefty profits from new technologies than in helping Americans become technologically sophisticated."

Many trade unionists had reservations about Reich partly because he lacked any record of pro-labor advocacy or any direct experience with the problems of the working class. After all, he was a Harvard professor from a Republican, pro-business family. Yet another way to view Reich is as an emerging

spokesman for the knowledge worker, whom he praises lavishly: "Never before in history has opulence on such a scale been gained by people who have earned it, and done so legally." Reich claims that the country already knows how to create a new wave of symbolic analysts. He asserts that our major universities are among the best in the world, drawing students from all across the globe. As for our secondary schools, he makes the following observation:

"But some American children--no more than 15 to 20 percent--are being perfectly prepared for a lifetime of symbolic-analytic work...The formal education of an incipient symbolic analyst thus entails refining four basic skills: abstraction, system thinking, experimentation, and collaboration." But there is at least one worm in this apple. While theoretically all Americans could become symbolic analysts in a new global division of labor, in practice they will not. First of all, the new jobs being created in this sector are small relative to the job stagnation or loss in other sectors. There aren't enough of these jobs to go around, at least not yet. Second, even if there were enough jobs waiting to be filled, could a large majority, if not all, of our present schools educate the workers to fill them?

Not with the savage inequalities in our current school system. Even Reich is not unaware on the problem. Lamenting the crisis in public education, he even offers a wish list of what would be needed for all of us to become symbolic analysts:

"It would require early intervention to ensure the nutrition and health of small children and enroll them in stimulating pre-school programs...excellent public schools in every city and region and ample financial help to young people who wanted to attend college...substantial additional investments in universities, research parks, airports and other facilities conducive to symbolic-analytic work....Finally, sufficient on-the job training..."

Reich's tone here is one of "don't hold your breath," and towards the end of his book, he becomes pessimistic. He sees the main trend among the "fortunate fifth"-- his knowledge worker constituency--as one of being overwhelmed by a selfishness disconnected from any social responsibility beyond its own narrow circles. As for the other sectors of the labor force, he sees them primarily as passive victims or as resources to be mobilized for narrow, nationalistic and backward causes. He concludes simply with a moral appeal for everyone to become community spirited and do the right thing.

In the end, Reich's book reveals two things about the top policy makers of the Clinton administration. The first is that they are smart enough to realize the true depth of the crisis of latter-day capitalism. The second is that they lack the courage and the vision to mobilize the main victims of the established order. That task--carrying the required radical reconstruction of society through to the end--remains for more capable hands.