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A New Social Contract:
The Need for Radical Reforms in the Fight for Jobs and a Living Wage

By Carl Davidson

The Jobs and Living Wage movement spreading across the country is a response to three main features of today's economy: 1) the vast and growing inequality of income and living standards across the entire population, 2) growing insecurity in middle-income sectors due to downsizing and the redefinition of work, and 3) harsh and degrading poverty for the structurally unemployed and urban welfare populations.

The grassroots organizations and coalitions fighting these conditions have put forward a diverse collection of demands and programs. The New Party and ACORN, IAF, AFSCME, and a number of local labor councils, for instance, have launched mass campaigns in a dozen major cities. They are demanding a $7.70-an-hour minimum wage for any business with substantial city contracts, subsidies or tax abatements. Other groups have focused on the federal government, and are pressing several bills in Congress that would create jobs by spending more funds on infrastructures--schools, roads, bridges--and restoring cuts in welfare. The Labor Party is trying to build support for a Constitutional Amendment guaranteeing jobs for all at decent wages.

While the various packages of demands, programs and legislation each have strengths and weaknesses, all of them can be endorsed as making a positive contribution to an immediate and desperate situation facing the poor and unemployed.

Yet as socialists we are called upon to do more than simply get behind the local movements. We have a radical understanding of modern capitalism that goes beyond the immediate need to defend its tattered safety net.

We understand, for instance, that the current job crisis and draconian cutbacks inflicted on the poor are not mainly the results of the usual ups-and-downs of the business cycle. Nor is it the consequence of lingering pockets of rural poverty bypassed in the country's transition to a modern industrial society. Those crises had been met, however inadequately, by the social contract wrung out of the ruling class in all the reform packages from FDR's New Deal to LBJ's Great Society. In exchange for a relative degree of class peace, this contract redistributed wealth downward in the form of social security, unemployment insurance, public works like rural electrification and the interstate highway system, collective bargaining, Medicaid, Medicare and AFDC.

The current crisis of the poor and unemployed is quite different from the cyclical crises of the past. Instead it is the consequence of some deep structural changes that have permanently abolished large numbers of jobs in the low-skilled blue-collar and middle management sectors of the labor force. While new jobs have been created in other service sectors, their skill levels and racially restricted location requirements have generally excluded the low-income unemployed from filling them.

The result is a growing sector of the inner city population that is being excluded from the labor force altogether. Their plight is exacerbated by a power elite that opposes full employment in any case. Every time the official jobless rate gets down to 6%, the Federal Reserve Board goes into a panic over a fear of inflation, and adjusts interest rates to curb new job creation. To survive, many are forced into the underground economy, which in turn has lead to the vast expansion of the prison population.

Some of the liberal elites are disturbed by this situation, which they describe as a "social time bomb." However, the Gingrich-Clinton "bipartisan" right-center coalition currently in charge sees things differently. They want to make life even harsher for the poor, apparently with the hope that this will force their elderly to die sooner and their young people to have fewer children. They claim that the shredding of the safety net is for the more benign purpose of pushing people into employment. But since anyone with even a superficial knowledge of economic realities knows the jobs aren't there, we have to conclude that truth behind "ending welfare as we know it" resides in the more sinister motive.

The situation facing progressives is quite difficult. The current policies and conditions have dramatically exacerbated the division of the working class into two broad groups. One is mainly white, suburban, strung out on credit but still employed and living under the relative comfort of the old social contract, even if its tattered and worn thin. The other is mainly minority nationality, urban and now living in nearly intolerable and hopeless conditions outside the social contract. One group is controlled by the carrot, the other by stick--and the racial dimension of the divide is the key to the establishment's ability to maintain a relative degree of social stability.

In these circumstances, a progressive strategy based on simply restoring the old social contract and extending its reach by redistributing the wealth is not likely to be very effective. The recent defeat of single-payer national health care is instructive in this regard. The problem was that a good majority of the people already had health insurance of some sort. Many figured that if more people who couldn't afford insurance would become insured, their piece of the health care pie was in danger of being reduced. Many listened sympathetically to the arguments for universal care, but few could be mobilized to do anything to win it.

What, then, can be done? Probably the best set of strategic guidelines for socialist activists in the mass movements was put forward by Karl Marx himself in the Communist Manifesto. Socialists, he argued, should take part in all the movements and organizations of the working class. But he added that they should distinguish themselves two ways. First, in the movements of the present, they should look to the needs of the future; second, in the battles launched by a part of the class, they should take care to uphold the general interests of the class as a whole.

We need to advance a new social contract rooted in this perspective. It can't simply be a demand for socialism. It must be a set of demands and programs rooted in immediate needs, but standing a good chance of uniting a majority and pointing to future transformations. It must also be a social contract that engages the arguments of the right wing and exposes its bankruptcy. In terms of the Jobs and Living Wage moments, such a contract would include programs like this:

1. Jobs for all who are able and want to work.

This slogan itself expresses the limitations of the current labor market--the demand for work has outstripped the supply of jobs in unskilled sectors, while the supply of jobs is greater than the current number of qualified workers in high-tech sectors. When the market fails, the government must act, either by encouraging new capital formation, ie, new businesses in distressed areas, or by becoming the employer it in public works projects. There is certainly enough work to be done, either in repairing old infrastructures, rebuilding and reorganizing the schools for up-to-date training, or launching new environmentally friendly projects like solar power or Mag-Lev inter-urban high-speed rail systems.

The right wing has resisted almost all efforts to productively deploy tax revenues as productive social capital in these areas, claiming it to be too expensive. At the same time, they do nothing to inhibit the wasteful investment of capital in speculation that creates no new value--the casino economy, crooked real estate deals, or the shifting of production to low wage areas with no environmental protections. All these practices should be exposed and attacked for making our current problems worse rather than better.

2. A minimum income for all who create value.

This slogan raises the need for a social living wage not tied to a traditional job. There are many activities that create value for society but fall outside the market. Raising children creates value in the form of the next generation of workers, scientists and entrepreneurs. Organizing sports and cultural activities create value by raising the level of a community's physical and mental health. Students who work to expand their knowledge are creating value. Society should compensate those who create value for society, either indirectly though subsidies to the nonprofit sector or directly through a negative income tax.

A social minimum wage or income along these lines could drastically reduce the need for both a job-based minimum wage and the bulk of the current welfare system. An employer-paid minimum wage has two drawbacks: first, you have to have a job to get it; second, it prevents some small businesses from forming, except as part of the underground "off-the-books" economy. A job-based minimum wage of some sort would have to be maintained to prevent major businesses, such as the fast food industry, from taking advantage of the social wage as a public subsidy for themselves. But the rate could be considerably lowered, especially for small local businesses in distressed areas.

The social minimum wage is available to any taxpayer over the age of 18 who is creating value. If the person also takes on additional work with a private business, he or she would only have the social wage reduced in gradual increments. Thus there would always be an advantage--but not an overwhelming necessity--to finding regular employment even at relatively low wages.

The social wage would not apply to everyone. Healthy people who both refuse to work or to create value in any reasonable way would, by their own choice, be excluded. A small number of people, of course, are unable to either hold a job or create value in other ways due to physical or mental illnesses. These people should receive decent care through an appropriate combination income and medial and social services. Addicts seeking to recover, for instance, could receive medical and social services, but no cash.

But an incomes policy of this type--linked to positive endeavor and open to most of the population--would be far more likely to unite a majority of the workers, youth, the elderly, the unemployed and small business. Each of these constituencies would have a direct connection with its success.

3. School for all who want to learn

The changing nature of work today is demanding both top quality education of the young generation and continual training for the labor force generally. Our public schools and community colleges and universities must be open all year and become learning centers for the entire community, with childcare facilities, afterschool programs and evening classes open to all who need new skills and want to learn. The curriculum should be developed with the joint participation of labor unions, community groups and local businesses to insure that students are being trained in up-to-date technologies for jobs that are in demand.

Student fees should be minimal. The cost of education of this sort is neither a luxury nor a consumer good. Rather, it is a social investment in human capital that will be recovered many times over in the course of a worker's lifetime. In fact, employed workers should receive shorter hours and additional pay for their afterwork studies, while unemployed should receive the social minimum income while they are studying. Schools, however, are only open for those who want to learn; anyone attending school mainly to avoid work, socialize with friends or otherwise interfere with the majority who do want to learn should be excluded.

4. Basic healthcare for all.

The present U.S. Health care system is one of the main factors aggravating problems in welfare and unemployment. By placing the burden of health care costs on private employers, the country loses in three ways. First, employers are given incentives to work fewer employees for longer hours, since overtime rates are usually less than additional benefit packages for additional workers. Second, those on public assistance who would like private employment are held back because the employers most likely to hire them are least likely to have decent health benefits. Third, the taxpayers suffer by footing the bill for the poor without health care in the most inefficient and expensive ways. These fetters on the public health and productivity of all workers need to be removed. Expenditures for basic health care for all are not a luxury, but a necessary investment in social infrastructures that creates more value in the long run.

The New Social Contract as a Universal Toolbox

These four sets of structural reforms--in employment, income, education and health--form the basis for a new social contract. The new contract can also be described as a universal toolbox, providing every citizen with a much more equitable means of making a living. It differs from the old social contract by basing its features on the needs of a society in transition from an industrial order to a post-industrial, knowledge-based order. The key requirement for the success of the old social contract was a long-range overall rise in the quantity and remuneration of industrial jobs, even as the numbers fluctuated in the short range. Its components--unemployment insurance, welfare, social security--were meant to even out the fluctuations.

The technological revolution in the productive forces has seriously eroded, if not abolished, those prospects. The new social contract is addressed precisely to a permanent contraction in industrial jobs at the center of the labor force, along with an expansion high-tech and unemployable sectors at the top and bottom of the labor force. Its key component is expanding the social infrastructure for the growth of human capital, rather than dampening the rough edges of industrial capital. It provides every person with access to the means for developing their own value-producing skills, talents and interests while making a contribution to society at the same time.

The new contract, in sum, favors providing a universal toolbox for all over a safety net for a few. It stresses creating more equitable means for creating wealth over a simple redistribution of wealth.

Demanding a new social contract along these lines is a radical proposition in two ways. First, in the most common use of the term "radical," it is likely to be denounced or brushed aside as "pie-in-the-sky" or utopian, as unworkable or unaffordable. Second, in the true meaning of the word radical, it "goes to the root" of the problem, reveals the inner workings of what caused it, and points to a way out. The truth is the utopian solution is actually the more practical solution. The real reason radical reform meets with resistance, however, is its implied dramatic shifts in the balance of forces in

society. It enhances the consciousness, organization and fighting capacity of labor and its allies against the most divisive and parasitic elements of capital. While most liberals and even some conservatives could be won as allies for certain components of the contract, the partisans of the working class, especially the socialists, are the one s to press the issue forward. The time to begin is now.

Cutting Edge: Technology, Information Capitalism and Social Revolution

The following is the introduction to Cutting Edge: Technology, Information Capitalism and Social Revolution, edited by Jim Davis, Thomas Hirschl and Michael Stack, due from Verso this summer.

By Jim Davis, Tom Hirschl & Michael Stack

How is one to make sense of the world today? Contemporary political and economic events as well as recent technological developments defy conventional analysis. The general breakdown of the post-World War II social order is well underway, visibly evident in the dramatic dissolution of the Eastern European and Soviet socialist economies. The dramatic polarization of wealth and poverty -- not just between the technologized and under-technologized nations, or north and south, but also within the technologized center -- exposes the "capitalism has won" and "history is over" pronouncements as rather premature. The socioeconomic polarization matures as the powers of science and technology leap ahead at breakneck speed.

While the traditional Left has lost much of its appeal, and the world's labor unions are on the defensive, new forces have stepped onto the world stage. Scenes from this drama are as diverse as the Los Angeles rebellion in 1992, the Chiapas uprising beginning in 1994, the regular eruptions in the industrial heart of the U.S., the tent cities and marches of the welfare recipients and the homeless in Philadelphia, Detroit, Boston, Oakland and other U.S. cities, the labor strikes in France, Korea, Canada, Germany, Russia, and the new student movement emerging in the U.S. and elsewhere. The world has entered a period of upheaval.

This collection of essays attempts to make sense of trends and developments as the 20th century draws to a close. From the outset, we should note that the authors in this collection do not all share the same assumptions, nor do they come to the same conclusions. Rather, they are part of an important struggle to understand the processes at work in order to reach a clearer and deeper understanding. The pieces share an attempt to confront the contradictions of society today, and put them on a firm material footing. Despite the many gloomy signals as this is written, they betray a spirit of optimism about the future.

Our starting point for this collection is the observation that we are in the midst of a profound technology revolution. For lack of a better phrase, we call this the "electronics revolution." Although that phrase would seem to exclude important new developments in bio-engineering and materials science, those new developments themselves would not have been possible without breakthroughs in electronics, especially in the field of microprocessors. Even though we are about 50 years into this technology revolution (the term cybernetics first appeared in 1947, shortly after the first computers), it is becoming clear that we are still only at the beginning of the process. Research into organic-based processes, for instance, may render "electronics" a temporary way station on the way to agriculture of a profoundly new type where the properties of protein molecules and the self-replicating powers of life are exploited in radical new ways. As the explosion of new developments continue, the phrase "electronics revolution" may come to sound ridiculously limited, but it serves our purpose for now.

Although the electronics revolution is still in its infancy, there are definite indications that it follows the model of historical materialism. Marx and Engels asserted that technological developments (e.g., the steam engine) allowed new boundaries and new parameters for society. Unforeseen technological innovations would establish the conditions for the final destruction of capitalism. In general terms,

"...at a certain stage of development, the material productive forces of society come into conflict with the existing relations of production..." Each chapter in this volume assesses, in some way, the dialectic between technological development and capitalist relations of production.

Many books, essays and articles have been written about recent changes in the means of production. Those writings that have addressed the social implications of the new technologies fall into distinct categories.

The non-critical approaches examine implications of technology for the organization of the workplace. These implications concern workers fortunate enough to have a place in the new economic order, and managers navigating the technological vortex.

Among those writings that are critical of capitalism, one body treats the new technologies as simply more of the same: "information capitalism" (to use Tessa Morris-Suzuki's phrase) is the same old capitalism with the same old exploitation. Other critiques are concerned with the class-partisan qualities of technology. For example, authors may examine how and why certain technologies develop, or consider how new forms of social control are made possible by technological development and deployment. Still another genre debunks the "emperor's new clothes" attitude of the apologists, pointing out the shortcomings of the technologies and their negative social consequences. Still another genre has seen the end of class struggle in the post-Fordist "information society", and retreats into personal politics and endless fragmentation of social struggles.

Our concerns with respect to technology are different. We enthusiastically welcome the promise of technology for ending material scarcity and for creating a foundation for higher forms of human fulfillment. Yet we suspect that the application of electronic technology within the framework of capitalism will not only fail to accomplish these ends, but exacerbate the misery and poverty under which most of the world already lives.

This collection is divided into two parts. Part I looks at theoretical considerations. Part II of the book looks at the social implications of the technology revolution around the world, and some of the responses to it. Because several essays draw extensively on concepts from Marxist political economy, a brief review of some of the major concepts may be in order.

Recognizing the central role of commodities in capitalism, Marx began his masterwork Capital with an examination of the commodity. A commodity is something produced by humans for exchange. It has two aspects to it: 1) a use value, that is, the quality of the thing that satisfies a need or a want; 2) and an exchange value, a quantity of human effort, or labor, which is the basis for exchanging commodities of different use values. Marx qualified exchange value as the socially necessary labor to make commodities, that is, taking into account the average skills, technology and intensity of work. For Marx, exchange value, or more generally value, roughly is human labor -- the activity of transforming the world from "things" into useful things, that is, things that satisfy someone's wants. It is on the basis of this common denominator -- as expressions of human effort irrespective of the specific work being done -- that products, or commodities, of different uses can be exchanged.

In the process of making things that satisfy wants (production), portions of technology, raw materials, buildings, etc. are used up. The value that this used up portion represents temporarily disappears, and reappears in the finished product. This process of destruction and creation is the heart of the production. Since the value of the used up portions is in a sense just transferred to the finished product, it is described as constant capital-- its magnitude has not changed during the process. Human labor, though has the peculiar ability create more value than is used up during production. Because

human labor "grows" value during production, Marx described the capital advanced to purchase a worker's ability to work (i.e., wages) as variable capital. Marx argued that human labor is the sole source of value, and value -- human effort -- is the underpinning of the entire economy. Capitalists accumulate wealth by expropriating surplus value (the difference between the value of the worker's labor power, paid out as wages, and the value created by the worker in the course of production). Profit is one form of surplus value, and the drive for maximum profits is the overriding goal of the capitalist. Capitalism puts a premium on technological innovation as a competitive strategy for survival in the marketplace.

Capitalists compete with each other to maximize profits, of which one of the main ways is by getting the workers to produce more in the same amount of time, by introducing more powerful and productive technology. At any given moment some capitalists are producing using the newest technology, and some are using old technology. When a commodity goes onto the market, it exchanges not at its individual value, that is, based on the labor used to produce it, but on the modal value of all of the same type of commodities from various producers, its social value. Capitalists who made commodities with the most advanced technology and the least labor in general will sell their commodities at the same (or maybe slightly less) price than then commodities made by the backward producers. Because their costs are lower, the advanced producers will realize extra surplus value, while those using backward technology and more labor will realize less surplus value.

The ratio of constant capital to variable capital is called the organic composition of capital. As more constant capital is employed in production, or less labor is employed, the organic composition of capital rises. Marx argued that this rising organic composition will cause the rate of profit to fall over time.

As more technology is thrown at production, a crisis in profitability emerges, manifesting itself as overproduction and the lack of purchasing power. A product unsold is value unrealized. This lays the basis for the periodic crises in capitalism, punctuated by unemployment, bankruptcies, and the destruction of capital. Once sufficient capital is destroyed, the system begins to expand again, and the cycle begins anew. The capitalist use of new technologies, while raising productivity, as Guglielmo Carchedi notes, also "necessarily implies crises, exploitation, poverty, unemployment, the destruction of the natural environment and more generally all those evils which high tech is supposed to eradicate."

In the first section of essays, the authors follow several lines of exploration into the terrain shaped by the new technologies. The collection starts with Morris-Suzuki's look at some of the "peculiarities" of knowledge as a factor in production. The new technologies are possible because of the accumulation of what is known about Nature. The continuing development of the technologies requires substantial training, research, etc. In this sense they can be described as "knowledge-intensive." The function of "knowledge" in the economy, though, is a problematic one. Once produced, knowledge is cheap to replicate; it's not "consumed" or exhausted after use; and, she notes, it "can only acquire a price when it is protected by a monopoly." Capitalism thrives in the new climate only by bending and subsuming knowledge formation to its needs through aggressive privatization, "harnessing freely available 'social knowledge' to the profit-making activities of the large corporation."

The consequences of the critical act of replacing human beings with machines under capitalism can only be understood by grasping the idea of the central role of the human being -- as the sole source of value -- in production. Caffentzis analyzes the history of this idea, in the context of 19th century discussions of machines, energy and work, and brings the argument up-to-date with an analysis of the "Turing Machine" -- a concept developed by the brilliant English mathematician Alan Turing in the

1930's. Turing showed the possibility of constructing a machine capable of carrying out any computational task that a human being could do (with a few notable exceptions). Caffentzis points out that the Turing machine means that any skill, whether physical or mental, can be replicated mechanically -- "computing, like tailoring and weaving, is just another aspect of human labor-power that can be exploited to create surplus value and, if its value is higher than a rival machine, it can be replaced." The reason that human beings are the sole source of value is therefore not to be found in any unique talents of the worker, as any machine can theoretically provide that; rather, it is to be found in the profound relationship of power and property, at the intersection of the worker and capital.

The concept of the Turing machine raises an immediate question: is electronics, as the basis of contemporary production, a qualitatively different technology, not just "more," but "different." In Capitalism and Automation, Ramin Ramtin argues that the capture of human skills in "software", capable of being repeatedly activated by microprocessors, "is a technology which brings to life the machinery of production, it is thus in itself a radically new form of objectification of labor." In her essay "Robots and Capitalism", Morris-Suzuki considers the implications of the replacement of living labor with "objectified labor" in the form of software. When robots replace living labor in production, surplus value, and hence, profits, cannot be created in the old ways. In her analysis, surplus value can only be created "in the design of new productive information and the initial bringing together of information and machinery." So companies are forced into creating the "perpetual innovation economy." Such an economy accelerates the commodification of particular kinds of information or knowledge useful to production.

Martin Kenney, following on Morris-Suzuki's work, pursues the problem of value creation in the contemporary work site. Knowledge becomes "the critical production factor" in the "innovation economy" where workers are reconceived as sources of "knowledge", and must work within a tighter discipline to ensure uninterrupted production. Kenney notes the central role of "intellectual property" in the "innovation economy", but he suggests that "protecting" copyrights and patents -- essential to maintaining the commodity status of knowledge -- in the digital age is problematic, if not ultimately impossible.

This view of a "knowledge economy" is not without its problems. Dan Schiller points out that "knowledge" is essential to all societies. The location of "social discontinuity" is not to be found in what he calls "information exceptionalism", in seeing some special qualities of information or knowledge. Such a view removes information and knowledge from a long history of "commoditization", ultimately mystifying it. The "knowledge society" is not the end of history, but rather, capitalism, adjusted (and adjusting) to a new technological climate.

Jim Davis and Michael Stack follow up on Schiller's critique of information exceptionalism by looking at one critical aspect of the application of new technologies to the economy. Digitalization -- the conversion of information and "knowledge" into the 1s and 0s that can be manipulated by digital machines -- is an important means by which "knowledge" and "information" is cheaply replicated and quickly socialized. The enormous economic advantages of digitally rendering products means that more and more commodities appear in an "information form", and the economy is undergoing a broad restructuring to take advantage of the digital rendition. The Internet represents the re-creation of the transport and communication system to handle the digital traffic. Various industries, once separated by incompatible media, find themselves digitally converged into the same competitive arena. And not least, the digital transformation is having a profound affect on the role of human beings in production.

It is important to remember that these technologies spring from somewhere. When scientists, engineers and other mental workers are set to solving problems posed by their employers, the results are stamped with the demands and needs of the ruling class. At the same time, though, technology is produced amidst conflicting social relations, and thus holds the possibility of being a tool for liberation as well as for social control. Jonathan King looks at the roots of one particular field, biotechnology. The history of biotechnology, funded in large part through public monies, is increasingly appropriated by private interests. Private appropriation radically constrains the social benefits of biotechnology, and raises the specter of "egregious violations of human dignity and body in the quest for private gain."

A recurring theme throughout the essays in this book is the impact of electronics, as well as other new technologies made possible by electronics (including digital telecommunications, computers and biotechnology), on the working class. The exchange of the ability to work (i.e., labor power) for wages, and wages for necessities, is the foundation of capitalist relations of production. The idea of the "end of work" has been raised in several recent books, including Jeremy Rifkin's The End of Work, and Stanley Aronowitz and William DiFazio's The Jobless Future. Morris-Suzuki points out that if human beings are made redundant in production by automation, then surplus value disappears, and capitalism becomes unsustainable. "Perpetual innovation" forestalls the problems faced by Capital.

Ramtin, in Capitalism and Automation, poses the dilemma for capitalism:

> "[F]or capitalist production 'a certain number of workmen must be employed in the same field of labor'. Less than a certain number of productive workers and capitalist production becomes impossible. The application of microelectronics technology to production processes will radically reduce that 'minimum' quantity of living labor-power essential for the self-expansion of social capital. At a certain stage, the quantitative displacement of living labor generates a qualitative break in the organization and structure of capital production." (Ramin Ramtin, Capitalism and Automation, Pluto Press, 1991. p. 56)

New technologies mean the end of work; the end of work means the inability to make profit, the inability to realize value, and the end of value creation. These describe the conditions for the end of capitalism.

This of course raises a few problems. First, is "work", or value creation, disappearing? Caffentzis dismisses this notion. Davis and Stack suggest looking beyond the often-cited employment statistics to other indicators of the trend towards "the end of value." Davis and Stack suggest that capital, as a social relation, starts to break down as the cash nexus of the wage relationship is eroded, and that this process is most vividly revealed in the social destruction going on throughout the world.

A second question is deeper -- is change possible? Can we envision a society beyond capitalism, where value, "work" in the traditional sense, exploitation, etc. no longer exist? Is revolution possible? Mike Brand presents a unique approach to this question by drawing on recent developments in complexity theory, establishing a connection between it and dialectics, and testing the applicability to social change. Thomas Hirschl revisits Marx's theory of revolution in light of current changes. "Maturing social polarization in an era of qualitative technological progress is Marx's formula for revolution."

A third question is very practical: how will capitalism end? What strategies might be employed to forestall it? No one is suggesting that it will collapse on its own from its internal contradictions. The question of agency -- who will do the deed -- must be raised.

The second set of essays looks at social implications and responses. Beyond the consequences for labor, capitalist deployment of new technologies has deindustrialized metropolitan urban centers, created a bio-engineered, industrialized world agriculture system, and restructured the world economy around high speed transport and telecommunications. In addition, manufacturing heads to the periphery, and the international currency market dominates national monetary policies. These economic transformations have forced a fundamental struggle for survival upon large sections of the population, and especially those workers cast into the ranks of the marginally employed and permanently unemployed.

In this climate, "jobs" are a major political issue for governments, and various options for expanding employment have been advanced, from more education to government-financed jobs programs to job-sharing. The intensity of the contradiction between technological development and property relations can be gauged by the unemployment crisis. The upward trend in unemployment since 1973 in both the industrialized and less industrialized nations calls into question the capacity of capitalism to provide adequate employment over the long-term. This policy crisis is openly acknowledged by organizations such as the "G-7" group of industrial nations, and the International Labor Organization. Sally Lerner provides an overview of the (mostly failed) employment policy strategies advanced by governments of the U.S. and Canada.

The policy debates around unemployment are often framed in terms of globalized production and globalized labor markets. Some argue that further globalization is a solution to unemployment, while others assert that globalization is a primary cause of unemployment. Our reading of the evidence suggests that this debate is miscast. The higher levels of global integration of the economy are not independent of the new technologies -- rather, the pace and quality of globalization today is only possible because of new transportation and communication technologies. Global market dynamics (e.g., trade, investment and labor migration) are able to allocate unemployment across a much wider geography.

The struggle for jobs is just one dimension of the social response. Nick Witheford, drawing on the work of the autonomous Marxists, describes how, as capital maneuvers to contain the working class, the working class repeatedly recreates the class struggle in new ways. In "high technology capitalism", these struggles are being recreated in ways that exploit what new technologies make possible. Witheford catalogs this new class struggle emerging in the "social factory" at the various moments of the "circuit of capital": production, circulation, reproduction of labor, and the "(non) reproduction of nature." The struggle takes new forms as labor is pushed out of the factories and offices and into the streets. Ramtin proposes that our understanding of "alienation" must correspondingly change. Confrontation will occur less on factory floors populated by robots, and increasingly within the political domain, in direct confrontations with the State.

Since the technology revolution, and the restructuring around it, is a global phenomenon, the collection would not be complete without a discussion of the less industrialized areas of the globe. For A. Sivanandan, we are "caught in the trough between two civilizations: the industrial and post-industrial." Through "communities of resistance", a new kind of class struggle is emerging in the new technological climate. Gerard Otero, Stephanie Scott and Chris Balletto analyze recent developments in Mexico in light of agricultural and biotechnology trends. Abdul Alkalimat looks at the concept of class struggle in Africa. Although rich in natural and human resources, Africa is a continent of the

poorest of the poor, bound to the centers of capitalism as a source of mineral resources and exotic agricultural products. Within Africa, the deepest contradictions of technology and social destruction can be observed. As people are driven out of a meager existence in small-scale agricultural production, they completely leap-frog the "working class" (for there is, for all practical purposes, none) and, Alkalimat argues, land into a "new class being formed in the forbidden zones, areas within cities, rural provinces, refugee settlement camps, and even entire countries that have become economically unstable, consumed with violence and crime..."

So another possible avenue of exploration is in the relationship of broad technical stages of history, and class formation. The formation of a capitalist class and a working class was inextricably linked to the development of key technologies in manufacturing, transport and communication over a period of a few hundred years. With today's qualitatively new technological environment, can we make projections about the development or formation of new classes in some kind of relationship to the new technologies? For example, could the broad margins of the working class, dismissed as an "underclass" or maligned anachronistically as a "lumpen proletariat," be in fact a new class-in-formation? Could this new class be, not a working class, per se, but a new proletariat, in the Roman sense of the term, being forged in relationship to technologies that destroy the use-value of their labor power? Historically, new classes have had to struggle to recreate productive relations that would accommodate them. How does this shape our understanding of "class struggle" today? That is, the "end of work" may suggest the "end of the working class" as we have known it, but not the end of class struggle. Nelson Peery looks at these questions in a talk reprinted here.

Unfortunately, this volume can only hint at the possibility of a world free of want, where the promise of science is fulfilled, and where knowledge is unleashed as a social force. We believe that such a future is visible on the horizon of history. For this vision to seize hold, it must be taken up, struggled over, articulated, popularized, and made into a material force.

The questions we are posing here we think are the proper questions. They will take us forward, not just towards understanding the world that we live in, but towards changing it. For too long, the debate about social change has been bound up with old concepts of a world fast disappearing. A sharp edge of new ideas is needed to cut through the accumulation of exhausted ideas. These essays are a contribution to that effort.

Globalization and the Technological Transformation of Capital

By Jerry Harris

Lenin, in his 1916 essay on Imperialism argued it was the domination of finance capital over the export of commodities that constituted one of the major features of the new age. Lenin saw imperialism as a new epoch changing the face of the world. A qualitatively different system from the early Dutch and Genoese banking houses which began trading commodity futures in the 1600s.

We are faced with a similar epochal question today. Is globalization a mature capitalism that has outgrown its national adolescence into a unifying world system with universal commodification? Or have we reached a new stage of development where the technological revolution has opened the door to a qualitative leap in the expansion of capital? Does the current "globalization" expansion have fundamental differences with the international markets that characterized imperialism from 1860 to World War II?

As A. Sivanandan has observed: "the qualitative changes brought about at the level of the forces of production have brought about changes in the mode of production which, in turn, have led to changes in social relations . . . If the handmill gives you society with the feudal lord and the steam-mill gives you society with the industrial capitalist, the microchip gives you society with the global capitalist." (Race & Class, April '96).

Capitalism gave birth to the modern nation state; its economic form is historically bound to its political structure, and the social relations it created. Today globalization functions in a manner which undermines the nation state from which it originates. This is the essential difference between second wave imperialism and third wave globalization. The speed and carrying capacity of digital telecommunications have allowed capital to escape national control. These changes are occurring in the mode of production and the way in which wealth is created; in a new international legal superstructure; in the redefinition of sovereignty and state control of the economy; in the restructuring of the world labor force and it's social entitlement; and a new ideology of borderless free markets.

Not only does the information revolution affect the movement of capital, it also affects where production is carried out, and how products are sold. The old slogan, "What's good for General Motors, is good for America" can no longer be applied. That motto, of the most powerful second wave corporation, reflected an economic vision which sought to develop a stable "middle class" as a consumer base for a huge national economy. Corporate strategy was national strategy.

But today's transnationals set their sights on a world market; national strategies are secondary. This is how corporations have responded to the crisis of accumulation. As national markets became saturated and structural limits on real wage increases were reached, the technological revolution allowed capital to build a new global economy to escape its national restrictions. The abilities to instantaneously transfer money worldwide lead to such an explosion of financial speculative markets that a new structure is now being built to facilitate this qualitative change. Meanwhile on the commodity side of the economy, a market that targets the top 15% of the world consumer market is replacing a broad based middle class national strategy.

Wealth and the New Forces of Production

Time has conquered space. The digital and electronic transfer of information via satellite, telecommunications, fax, and modem has created an instantaneous and interconnected world of finance unlike previous times. The ability of these new means of production has propelled money into speculative activities unrelated to the production of useful commodities. Money is now simply in search of itself. Just as industrial technology directed money away from land and into the factory system, information technology has propelled investment away from manufacturing and into global speculation. This is an interconnected process driven by the needs of accumulation combined with the abilities of the new technology.

Perhaps the most important tool for the new economy is what the New York Times called "the computer system that is the heart of global capitalism," CHIPS. The Clearing House Interbank Payment System ties together 142 banks and does 150,000 transactions a day. The system is owned by 11 large New York banks and transfers $2 billion a minute, or about a trillion a day. That is half of the electronic transfers in the world. The next largest electronic system is in Belgium, connecting 1,000 banks to SWIFT, the Society of Worldwide Interbank Financial Telecommunications. These are the new tools of production and transportation for international finance.

To get an idea of just how big the financial markets are, we need to review some figures. The total value of financial assets traded in global markets in 1992 was $35 trillion, twice the GDP of the 23 richest industrial countries. In the January 1997 issue of Monthly Review, Daniel Singer points out that, "daily international transactions now exceed on an average the astronomical figure of one thousand billion dollars, that is to say more than the total gold and foreign currency reserves of all the members of the International Monetary Fund . . . Financial capital now reigns supreme." These assets have been growing at two-and-a-half times the rate of the GDP since 1980, and estimates have put their value at $83 trillion by 2000.

The biggest financial market is the exchange of foreign currency, the simple buying and selling of money. Exchange transactions are sixty times larger than world trade in manufactured goods, with some $1.3 trillion a day rocketing through electronic space. In fact, five of every six dollars that move in the world economy travel via electronic transfer. The currency markets never close. Forty-five percent of the activity occurs in Europe, 30% in Asia, 15% in the U.S., and the remaining 10% spread out in third world markets. This trading revolves through world time zones 24 hours a day where billions of dollars are traded with eighteen cent phone calls. Speed is so essential that software creating a ten-second trading advantage resulted in millions in profits for Bankers Trust.

The growth of stock markets has been worldwide. The $13 trillion listed in integrated markets circulate the globe in seconds. New markets exist in Brazil, Argentina, Thailand, Taiwan, Russia and 65 other countries. There are now 350 types of future contracts. The 1980s was a period of massive financial innovation. As pointed out by Saskia Sassen, "any concentrated pile of money has become attractive to traders." (Losing Control? Page 47) Profits can even be made by selling off Third World debt. After collecting years of interest payments but still owning the principal, banks will sell the remaining debt for half price to other banks who will continue to collect interest. Some Third World governments seeking to escape debt will trade equity and stock in state owned corporations. Most coveted by international financiers are assets in communications and financial services.

Information technology has so transformed banking and financial activity that Sassen contends we "lack an analytical vocabulary" (LC, page 21) to properly describe the changes. Economist Felix Rohatyn gives us a picture of this new production of wealth as he describes people who; "...buy and

sell blips on an electronic screen. They deal with people they never see, they talk to people on the phone in rooms that have no windows. They sit and look at screens. It's almost like modern warfare, where people sit in bunkers and look at screens and push buttons and things happen . . . " (Global Dreams, p. 386). This is certainly a new type of worker in a new type of environment, creating a new type of value--value alienated from social production and solely based on information.

As Walter Wriston, past CEO of Citibank points out, "in the age of global banking, selling rapid information about money is the key to making money," (Global Dreams, p. 381) Paper has no value in itself. In an electronic world the value of money is based on an exchange of information. Information based on an analysis rooted in the political bias and economic philosophy of several thousand transnational capitalists and money managers. Value grows or shrinks based on what governmental policies and economic activity they believe is best for their money--money that increasingly looks for quick results based on the ability to rapidly manipulate it through the new digital technologies.

An example of this activity was the crash of the Mexican economy. The peso became overvalued, driven by financial speculation and the huge investments of international financiers. When these electronic capitalists decided to withdraw their billions, (accomplished in less than three days) it was based on their analysis about Mexico's political stability. Their ideology did not consider alternate solutions, such as the promotion of real value-added activity based in manufacturing, the support of local business', the creation of jobs, and the protection of homeowners. Bankers recovered their profits, but at the expense of millions suffering a depression equal to that of the 1930s.

As Fred Rosen points out in an article titled, "IMF: One Step Closer to a Global State", Mexico is no longer in control of its national economy. Rosen says; "As the multinationals become proxy governments, and transnational banking institutions become truly global, being the president of Mexico has become much like being mayor of Detroit. And soon being the head of a national bank like Mexico's Banamex, will be like being a branch manager of Fleet Bank in Poughkeepsie, N.Y." (NACLA, Dec. 1996, p. 5).

Banks are no longer the only players, or even the most important. Trillions of dollars are invested through financial houses, investment firms, and insurance corporations. In 1980 Citibank was the largest in the world, and twice as large as any other U.S. bank. By 1992 it dropped to number 20 among world banks. Of the ten largest banks today, eight are Japanese and two are French. In fact, by 1989 the 13 biggest Japanese banks had five times the capitalized value of the largest 50 U.S. banks. While this is a significant change in the centralization of money, U.S. investment firms have in fact outgrown most U.S. banks.

Another huge pool for international investors is the bond market. Bonds are sold by governments seeking money to run their programs. But bond debt creates political constraints on government policy. Bond ratings are tied to assumptions about what constitutes good economic policy. That translates into narrow market efficiencies in which unemployment become unimportant. This means conservative money managers can manipulate the bond market in order to brake social spending. Since social programs are seen as inflationary, which devalues money, bond holders can dump their holdings, drive-up interest rates and slow economic growth. It's what Wriston likes to call: "asserting control over government, disciplining irresponsible policies and taking away free lunches" (The Twilight of Sovereignty, p. 66). In the U.S. 45% of all bonds are held by 1% of the population, and 17% by foreign interests.

The technological revolution has also deeply affected global manufacturing and commodity production. Anything can be produced anywhere, and sold everywhere. Skills and jobs are transferred worldwide, with the production process itself fragmented between different countries. Of the 100 largest economies in the world, 50 are transnationals. While centralized controlled remains in the hands of a few, there has been a deconcentrating of production away from the old industrial urban centers of the north. When new industrial factories are built in Mexico, Thailand, or Indonesia, they don't look like Henry Ford's River Rouge in 1935. Many of these plants use the most up-to-date computerized production methods, increasing their profits through both low wages and technological advances in productivity. If faced with rising labor costs when workers organize, corporations will jump to other countries. Greater flexibility exists not only in moving money, but also in moving manufacturing.

Ford's plant in Hermosillo, Mexico has the best quality and production rates in North America. Hourly labor and benefit costs are $2, compared to $30 in Detroit. That translates into a boost of $672 in profits per car. In Chihuahua, Mexico, Ford has built a state of the art factory with automated capital intensive machinery. Applications run 12 to every available job. Training goes on at a local technical college with graduates going directly to Ford. The plant produces 1,200 cylinder blocks per shift with only 16 workers. Workers paid at half the wages of other Mexican auto workers, and at two-thirds the benefit level.

In the computer industry both high and low end jobs are done worldwide. Data processing centers are spread from Manila, to Ireland, and around the globe to the Bahamas. The time it takes to send work from New York to the Philippines, differs only in seconds from the executive sending work to a secretarial pool downstairs. International data centers are doing everything from credit checks, library catalogs, to patient records and Playboy articles.

At the high end of software writing are new centers such as Bangalore in India, where universities have produced 75,000 programmers. The results have been home-grown computer businesses which receive work from Motorola and IBM. These knowledge workers are as well educated as most American graduates, but are paid about $4 an hour.

This global production is carried out by 100,000 Transnational Corporations (TNCs). But the largest 350 have sales that equal one-third of the GNP of the industrialized countries. These corporations have more than 25% of the world's stocks and assets. The top 100 TNCs have only half of their assets in their country of origin.

The New Relations of Production

Globalization has been resulting in a changing relationship between labor and capital. The deconcentrating of manufacturing coupled with its flexibility has lead to a weakening of unions and the strengthening of capital. The new technology has also been used to develop new forms of control on the shop floor and in the office. But even deeper effects are evident. Significant changes in work categories and labor stratification are occurring along with growing permanent unemployment for masses of people. Within the capitalist class there is a shift in power and wealth away from the national industrial barons to a new global bourgeoisie and information elite. As the economic base shifts, as wealth is created in different ways from second wave industrialism, these changes shape new relationships between classes.

In the U.S. manufacturing jobs have shrunk from 33% of the labor force in the 1950s to about 17% today. The losses began in the 1960s and turned into a flood by the 1980s. Many of these jobs have

been exported to a global labor force as technology has made the transfer of skills easier. In 1991 50% of all U.S. exports and imports were within U.S. corporations. Today there are 175 manufacturing free enterprise zones in the world employing four million workers, 2.6 million of whom are young women. In Indonesia Nike pays 82 cents a day. Their cost per shoe averages $5.60, for a product selling from between $75 to $135 a pair. Michael Jordan makes $20 million for his contract with Nike. The Nike workforce of 12,000 mostly teenage girls in Indonesia earns a total of $5 million a year. But the transfer of jobs has not been all one way. BMW went to South Carolina where they pay $12 an hour, rather than the $28 per hour they pay in Germany. The flow of jobs and capital is happening everywhere.

Within the U.S. productivity has risen in the industrial sector, with many areas using just half the workforce of the past. The productivity gains of robots and numerical control machines are most clearly seen in industry. For example, Ford in the 1980s cut hours 47%, but gained in productivity by 57%. But new technologies have also been used to control the labor process. Just in time production, work by stress, flexibility, and lean production are all ways management has organized information technology to squeeze workers.

Rise of a New Working Class

The two most important sectors of labor have become knowledge workers and contingent labor. Knowledge workers are the single largest category of U.S. workers nearing 20% of the total. As pointed out by Barnet and Cavanagh, "The production, processing, and selling of information is the number-one growth industry in the world." (Global Dreams, p. 334). But these workers span from high-end designers to low-end data processors, and both are global. Ford Escort designers work from three different countries, linked to computers in Dearborn working with parts from ten different nations. Data processors input information anywhere with work from everywhere.

The fastest growing manner of work is part-time, temporary and homework. This contingent category was half of all new jobs between 1980-87. By 1995, 60% of all new jobs were contingent, 60% of all new jobs earned below $20,000 a year, and 18% of the workforce employed at 40 hours a week made wages below the family poverty line. This type of labor force is being built to match the new capabilities of technology. As information speeds up, so does production and the market. This calls for greater flexibility in order to exploit the greatest potential presented by the new tools. Thus, the restructuring of the labor force into a more easily disposable pool of workers allows capital to respond more quickly to their own needs. The use of the technology is driven by the needs of accumulation, the technology does not drive the new organization, only makes it possible. But the possibilities are revolutionary, and this is what important sectors of the capitalist class have realized.

As the new work relations become global, new waves of immigrant workers seek jobs across borders. When capital goes global, so does labor. The number one export of Bangladesh and Jordan is labor. Jordan earned more from it's citizens sending money back home than it's total export of goods. In Los Angeles 40% of the population is foreign born, and New York reflects the same pattern. But not all of this is unskilled labor. Foreign born students in the U.S. account for 50% of all math, computer science, and engineering degrees. About 40% of all new patients in the computer field are from immigrant workers, and in Silicon Valley almost half the workforce for many corporations are foreign born. There is global competition for intellectual capital, and the U.S. is leading the race.

As the world economy changes there are global capitalists pushing and developing the process. This new global bourgeoisie represents two basic economic sectors, finance and the digital economy. The digital economy is in computers, telecommunications, media, phone and the cable industries--those

corporations taking the lead in conceiving, developing, and producing the new tools of production, and its infrastructure. This diverse group of players shaping the new economy includes corporations such as Intel, U.S. Robotics, the Bells, and Motorola. The shift in power is clearly seen in the changing positions of the manufacturing and information sectors. GM is valued at $35 billion, while Microsoft is worth $71 billion.

There is a complex struggle shaping up between the new and old centers of capital. Although the second wave military-industrial complex has adopted and depends on new digital technology, the government spending, tax codes, and legislation which protect them are coming under increasing fire. For example, second wave political movements which attack immigrants are hotly opposed by silicon valley executives who want open access to world intellectual capital. Greater spending on education, retraining, and the development of human capital is often counterposed to the huge military budget. Changing the tax codes which protect the markets of industries like auto and steel, to a system which encourages investments in new technology is another point of conflict. All these issues are regularly covered in Wired magazine, a major voice for the digital economy.

The other major developing group is a class of the global financial elite. Digital technology has affected international finance more than any other economic sector. While the computer industry is producing value based in physical assets, much of the wealth in finance is alienated from actual physical products or useful social activity. Both sectors are driven by knowledge and information, but their effects on society are very different. This international bourgeoisie is very aware of itself. For example, Citibank made a list of 5,000 individuals whose net worth was $100 million or more. The bank then proceeded to help the superrich of the Third World get their money into banks in the U.S. Today there are 350 individuals with a worth of a billion dollars or more, their wealth is equal to half the world's population.

The financial strategy of Citibank is worth some attention. This bank under the leadership of Walter Wriston and then John Reed has innovated some of the most important changes in world financial markets. Corporations now focus on the top 15% of the world market, because the bottom 85% of the world's people simply don't have enough money to be considered important. As Reed stated; “There are five billion people living on Earth. Probably 800 million live within societies that are ‘bankable’” (Global Dreams, p. 383).

Reed's ideas have strong sway. In a knowledge economy, education becomes the key point of access. To use and buy information products and to be part of the new economy depends on your level of education. In most parts of the world, class and access to good education are closely linked. As Reed observed, “We made an important discovery that drove everything we did later...People's attitude about finances are a function of how they're raised, their education, and their values, not of their nationalities”, (Global Dreams, p. 376). Class, not nationalism is the unifying theme here. A world wide upper middle class ruled and cultivated by an international bourgeoisie is the vision that drives this economy--a world also divided between information rich and information poor.

This understanding drove Citibank's credit card strategy in the Third World. When Citibank looked at Asia they saw 10 million people making $30,000 or more outside of China and Japan. The best way to find them was simply the phone book. Over 50% of the world's population has never even made a phone call. Only the wealthy have phones, and of course phone lines are a necessary tool of the new economy. So in looking at markets in India, where computer use is growing at 25% a year, Pei-yuan Chia, head of Citibank's global consumer operations was able to say; “Forget about 90% of the people, and focus on the top 10%. That's 80 million people” (Global Dreams, p. 377). In Indonesia the market become owners of TV. satellite dishes.

While there has been a decentralization of production, the third wave economy is producing greater concentrations of power. Sassen argues this concentration involves; “top level financial, legal, accounting, managerial, executive, and planning functions”. (Losing Control? page 10). While many of these services are contracted out, they nevertheless take place in a handful of international cities such as New York, London, and Tokyo. As Sassen points out; “the more globalized firms become, the more their central functions grow: in importance, in complexity, and in number of transactions. The sometimes staggering figures involved in this worldwide dispersal demand extensive coordination and management at parent headquarters.” (LC, p. 9). This complex and centralized coordination of global markets is made possible by the speed and reach of information technology.

These centralized functions have a territorial aspect. They take place in enclaves in world cities, both in the developed world and third world. There are wired and affluent blocks in Manila, Mexico City, and Shanghai, as well as Frankfurt, Paris and Los Angeles. Malaysia is planning to build the first fully wired capital city in a 250 square mile area the government is calling the Multimedia Super Corridor. This third wave Brasilia is expected to be finished by 2020. This same global process has brought third world enclaves into the advanced centers. Vast stretches of New York and L.A. look, feel, and live in conditions that parallel the poorer areas of the world.

Ideology and Superstructure

As the digital economy gains strength it changes the relationship of capital to the state, creating a new legal structure and dominant ideology. Second wave imperialism has key differences with third wave globalization. Imperialism was tied to the national sovereignty and development of the state of its' origin. A key aspect was the development of a broad middle class and labor aristocracy. As the famous British imperialist Cecil Rhodes observed; “I was in the east end of London yesterday and attended a meeting of the unemployed. I listened to the wild speeches, which were just a cry for ‘Bread, Bread’, and on my way home I become more than ever convinced of the importance of imperialism ... If you want to avoid civil war, you must become an imperialist.” (Lenin, Imperialism, p. 72) Revolution or imperialism, the choice is clearly stated. The exploited wealth of the third world would make the growth of a middle class possible, and therefore national development could avoid civil war.

In fact, nationalism replaced class struggle as the dominant ideology within the working class and society as a whole. That was starkly evident by the support for World War I in the European socialist movement. As Hilferding pointed out; “For the imperialist this nation is real; it lives in the ever increasing power and greatness of the state, and its enhancement deserves every ounce of his effort...the national idea becomes the driving force of politics. The common action of the nation, united by a common goal of national greatness, has taken the place of class struggle, so dangerous and fruitless for the possessing classes”. (Hilferding. Finance Capital, p. 336) Nationalism, not globalization was the ideological context of second wave imperialism. As imperialists countries conquered the world, they made their territorial possessions part of their own nations, and closed international markets for their exclusive exploitation. It was this monopolization that lead to World War I and Germany's attempt to redivide world markets.

Today's ruling ideology sees no national borders, only markets. The creation of jobs and a growing middle class is not an object of globalization. International financiers could care less about an inner city middle class in Detroit or Chicago. The spreading waves of unemployment which helped sparked the L.A. riots didn't create the same fear of civil war which haunted Rhodes. Today's capitalists just sit down at their computers and transfer their money elsewhere. The political response isn't creating

new jobs, but throwing people off of welfare. This growing hostility to and criminalization of the poor is a political reflection of a global bourgeoisie disconnected to national development. When the chairman of Dow, Carl Gerstacher dreamed of buying “an island owned by no nation”, he expressed the not so hidden desire of his class. In fact, international finance has made the Cayman Islands the fifth largest economy in the world.

These changes are undercutting the idea of citizenship which arose with the building of second wave nation states. In the French revolution democratic inclusion was born within this philosophy of national citizenship. The mass struggle to expand voting rights created some popular control over the nation's economic and political decisions. Entitlements extended citizenship to welfare, education, and health. All of these rights revolved around state mediation and guarantees.

But globalization is reducing citizenship to an economic status, succinctly articulated by Margaret Thatcher's statement that there is no society, only individual men and women. We are now simply an economic being with no social existence, so the state has no social responsibility. Those with a good job live in a nice community, with excellent schools, safe streets, polite police, and politicians who return your calls. Those without jobs live in projects, with rundown schools, abusive police, and politicians who make you the cause of every problem in society. One is a citizen, the other criminalized. This truncated citizenship fits hand in glove with the marginalized contingent work force, and the changing relationship between capital and labor. But as the specter of unemployment spreads, the legitimacy of government shrinks. If citizenship is only based on economic well-being those outside that constricting circle become political outsiders moving to the right, the left, or into nihilistic rebellion.

Instead of “one man one vote,”globalization is based on “one dollar, one vote.” The control of massive amounts of money creates an exclusive club that Sassen labels a “cross-border economic electorate”. It's a return to property based voting rights, but on an international scale. This electorate has its' own economic policy objectives which undercut social and productive investment. Although cloaking their ideology as economic efficiency their bias effects taxes, public spending, credit control, interest rates, exchange rates, and income.

As a former IMF official stated, “International capital is extremely powerful. Nobody can stand in front of it. The ability of financial markets to impose discipline on government policies ... is nothing less than amazing.” (S.F. Chronicle, July 5, 1996) This is no surprise given the amount of money under control of international investment funds. For example, three large firms based in San Francisco have at their disposal $12 billion. Compare this to the U.S. government's annual foreign aid budget of $7.3 billion.

Wriston has become a major spokesperson for the global bourgeois giving clear expression to their ideology. He explains electoral democracy as an international system where financiers take “a vote on the soundness of each country's fiscal and monetary policies. 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”. (Twilight of Sovereignty, p. 9) “If your currency becomes worthless, the world knows about it very quickly. If your economic policies are lousy, the market will punish you instantly. I'm in favor of this kind of economic democracy.” (Wired, p. 202-03).

Here we find a new definition of democracy which excludes 99.9% of the world's people. Of course Wriston likes to pretend this international referendum reflects “the collective wisdom of people all around the world”. But who are these people? According to Wriston, “yuppies very interested in their

ability to make a buck". (Wired, p. 202). Meet the new citizens of global democracy. As observed by David Korten in the Nation; "A thin segment of the superrich at the very lip of the champagne glass has formed a stateless alliance that defines global interest as synonymous with the personal and corporate interests of its members".

Wriston doesn't limit his thinking to the new economic democracy, he is also an astute observer of technology and its' effects on sovereignty. As he states; "The increased velocity of money gives you a difference in kind - not just degree. It's like a piece of lead: you put it on your desk, it's a paperweight; you put it in a gun, it's a bullet. The huge volume and speed of the international financial markets has put a brake on the ability of sovereign governments to do a lot of things they used to do". (Wired, p. 202) How appropriate to see the global bourgeoisie as armed revolutionaries attacking the state. For Wriston information technology is a weapon aimed at governments and people around the world.

Wriston's book title, The Twilight of Sovereignty, underscores a key process of globalization, the weakening of nation-states and the redefining of the role of government. As Sassen points out; "global financial markets represent one of the most astounding aggregation of new rights and legitimacy...powers historically associated with nation-states". (LC, p. 38) It is not only that stateless corporations are escaping taxes and national responsibilities, but that they have used states to create a new international structure of laws and legitimacy. Transnationals can have their cake and eat it too. At the same time they reduce their tax burden and demand cuts in social services, they use government to help penetrate new markets, keep labor and environmental costs low, and subsidize their global activities. We are not looking at the disappearance of states, but the redefinition of their role.

The hegemony of free market ideology has bestowed legitimacy on a whole range of new laws and functions that were previously done by the nation-state. Corporations always played a dominant role in the state apparatus to protect their national economic interests. But globalization has transformed those interests, and so state functions have transformed to structure the new international economy. Sovereignty is being decentered to a transnational legal system and supranational world trade organizations. The state has been the chief tool of implementation, and in the process has altered itself. As Sassen observes; "Over the last twenty years a process has reconfigured the intersection of territoriality and sovereignty as it had been constituted over the last century" (LC, page 30).

The superstructure that regulates the explosion of new financial markets and global corporations consists of a number of important international institutions. These are: the Administration of International Commercial Disputes; Chamber of Commerce in Paris; American Arbitration Association; London Court of International Commercial Arbitration; and bond rating agencies such as Moody's and Standard and Poor's. In addition are the important agreements reached in NAFTA, GATT, and the World Trade Organization, while older institutions such as the World Bank and International Monetary Fund have extended their reach and affluence.

GATT has recently put particular focus on key areas of the third wave economy. The Uruguay Round eliminated barriers to international banking, insurance, information, and media services. At the same time it moved to give greater protection to the intellectual property rights of global corporations, hoping to prevent the development of an independent technological base in the third world. Meanwhile NAFTA and WTO are rapidly constructing a market that prevents national governments from passing any laws that help local companies compete with transnationals. These changes means both financial and manufacturing sectors will be less response to local needs, and be tied ever closer

to global markets. The grinding down of labor and environmental standards are also part of the package.

Globalization has trapped the third world in an intricate web of economic relationships. This is a response to the tide of independence which swept through the developing world after WW II. As the old colonies achieved political freedom from the territorial domination of imperialism they sought to develop independent national economies through import substitution and south to south trade ties. The new era of global capital hegemony has been achieved through the huge influx of money, the threat of its' rapid removal, debt, the flexibility of international production, and the new rules and regulations built to sanction and house these dominate relations. The key to the new system is its' flexibility, mobility, and speed; rather than its' territorial control, stability, and dedicated exploitation of any one particular people.

Conclusion

In the Nation, Jerry Mander opens a series of articles on globalization stating: “Economic globalization involves arguable the most fundamental redesign and centralization of the planet's political and economic arrangements since the Industrial Revolution.” (Nation, July 15,1996). This redesign was set in motion by the crisis of accumulation and stagnation in the world capitalist system. Like a man in a sinking ship looking for a way out, information technology provided capitalism a life boat to a new world of profits. It also provided the tools to construct new forms of domination and exploitation, with all the old habits and desires hiding the revolutionary possibilities inherent in the shaping of our future.

Information technology holds the possibilities for greater democracy and participation through the access to information and knowledge. Technological labor may lead to a new type of value which can destroy commodity production. It can develop environmentally safe modes of production, and help equalize relations between the north and south. The potential is there, but this demands a political will and a revolutionary movement which understands its' historic possibilities. Either a mass democratic movement will take hold and direct the use of digital production, or it will be dominated by global capital to extend and strengthen their own rule.

The left is beginning to respond to globalization. A developing agenda is crystallizing and movement has begun. Some of the key points have been: international labor standards at a living wage; international environmental protection and methods of production; sustainable local development using appropriate technology; reducing work-time and spreading work; the control of capital movements; and open borders. Such demands as a 24 hour work week, plus eight hours of education and retraining, with three days off, has become a practical full employment policy which guarantees an educated workforce that keeps in-step with rapidly changing technology.

Lastly, the concept of democracy must be extended to world citizenship. As Malcolm X argued in 1965, civil rights are something that a government gives or takes away, human rights are guarantees that every child in the world is born possessing. The content of these rights is a global struggle over the political, social and economic quality of life. The left needs a vision which sees the future not as a remake of the industrial past, but one which embraces a renewed internationalism. Globalization makes “workers of the world unite” more true and necessary today then when Marx made his famous call in 1848. Globalization or internationalism, which world will we create?

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Economic Globalization: Capitalism in the Age of Electronics

[The following is the Political Report from the April 19, 1997 meeting of the Steering Committee of the League of Revolutionaries for a New America.]

Every exploiting ruling class has had its global dimension and "global" aspirations. The level of the development of the productive forces and the economic relations of a society determine the form of this imperial oppression and exploitation. The Romans with their highly organized slave empire subjugated the world as they knew it and extracted taxes and slaves as their main source of wealth. Similarly, every stage and phase of development of capitalism has had a corresponding form of global activity.

At the beginning of this century, Lenin described the stage of the development of capitalism at that time as "imperialism." Developing from major technological breakthroughs like electric generators and motors, the internal combustion engine, new steel-making processes, the telephone and the radio, the 19th-century system of competitive, industrial capitalism gave way to a global form of monopoly capitalism.

This new stage of development of capitalism was characterized by the concentration of production such that monopolies controlled the economy; the emergence of "finance capital" as the decisive form of capital; the growing importance of the export of capital, as opposed to the export of commodities; and the territorial division of the world among the major capitalist powers.

Today, this system of imperialism is giving way to globalization - a new stage of capitalism characterized by electronics-based production; the desperate attempt to maintain value and surplus value production by whatever means possible; the internationalization of capital; and the replacement of productive capital with speculative capital as the dominant form of capital.

"Imperialism" was capitalism in the age of electro-mechanically based monopoly capitalism; "globalization" is capitalism in the age of electronics.

The End of Imperialism

World War I and World War II grew out of the struggle among the imperialist powers to territorially redivide the world. The end of World War II, with the European and Japanese economies in ruins, marked the beginning of the end of direct colonialism, a system which had seriously constrained the ability of capitalist countries to invest outside their own colonies. The process of the dismantling of direct colonialism lasted over the next several decades.

Led by the efforts of the United States, which had emerged as the economically dominant power by the end of the war, the agreements made at the Bretton Woods meetings in 1944 formalized the new international economic order. The U.S. dollar, fixed in relation to gold, was made the chief international currency. The United Nations was the political counterpart of the institutions made possible by the Bretton Woods agreements - the World Bank and the International Monetary Fund.

With the revival of the European and Japanese economies by the mid-1960s, the period of U.S. economic hegemony was over. The end of this period was signalled by the dissolution of the Bretton Woods agreement in the early 1970s. Capitalism is driven by the maximization of profit. The drive for profits requires both a constant advance in technology to cheapen production and eliminate

competitors, and a constant expansion of the markets in which to sell the commodities. This demanded the ultimate expansion of the market to encompass the entire world, free of national barriers; and, at the same time, the lowering of the cost of production to the absolute minimum. This expansion demanded the end of a territorially divided world, which was accomplished by dismantling direct colonialism.

At the same time, the introduction of labor-replacing technology means the beginning of the end of productive investment capital. All value (and profit) comes from the exploitation of labor. Laborless production means valueless production - and hence, profitless production. With laborless production, capital can no longer be utilized to create more value and more surplus value. So, capital is being shifted into purely speculative investment. A critical portion of capital is no longer "exported" (in the sense of being invested overseas for the production of more commodities). It is merely shifted, moved, transmitted around a global roulette table.

Imperialism extended industrial production throughout the world. The introduction of electronics into capitalism is ending the stage of imperialism, and opening the new stage of globalization.

Electronics-based Production

The stages of development of capitalism are defined by specific developments in the productive forces; the microchip defines the current stage of the development of the productive forces. Introduced in the early 1970s, the microchip is a light, tiny, cheap device that can be widely deployed to control production processes. It was the result of an effort to satisfy the growing demand for devices to reduce production costs and to cheapen the cost of coordinating the growing world economy.

The microchip and its sister developments in electronics made possible practical robotics. It cheapened the cost of the instruments of scientific production, paving the way for breakthroughs in other fields like "smart" materials, biotechnology, and digital communications; and it dramatically reduced communication costs.

The introduction of the microchip threw a radically new quality into an already global economy. Twenty-five years after its introduction, the power of the microprocessor continues to double every 18 months. As chips develop, they infiltrate new areas of production, increasing output and replacing the need for living labor - workers - in production.

At the same time, as the British newsweekly The Economist noted, "by reducing the cost of communications, [new technologies] have helped to globalize production and financial markets. In turn, globalization spurs technology by intensifying competition and by speeding up the diffusion of technology through direct foreign investment. Together, globalization and [new technologies] crush time and space." Cheap transportation and communication have also created a global commodity market, including a global labor market.

Desperate Measures

Unless the market can absorb the constantly expanding output of capitalism, the economic system freezes up and enters a crisis. Ultimately, this crisis is a result of the introduction of advanced technologies that brings on a crisis in profitability, but it appears as a crisis of overproduction, the inability to circulate commodities that the market cannot absorb.

William W. Keller, director of the Office of Technology, has complained, “Capitalism everywhere is turning out to be too damn productive.” So, to out-compete the other capitalists on this world stage, each capitalist is compelled to seek out the cheapest labor and the most advanced technology.
The increased productiveness of capital has not been matched by a proportionate increase in markets. William Greider defines the “central economic problem of our revolutionary era [as] the growing, permanent surpluses of goods, labor and productive capacity inevitably generated by technological innovation and the free-running industrial globalization.” (Chicago Tribune, January 20, 1997.) These surpluses affect steel, auto, textiles, electronic appliances - virtually every industry, except those on the cutting edge today (like semiconductors or communications).

To maintain profitability, corporations must lower their break-even point, redeploying parts of the production process overseas, reducing fixed costs by selling plants and other assets, cutting out middle-level employees, converting jobs to temporary work. This results in reserves of idle people and unused production.

The problem is further complicated by the fact that some countries still have varying amounts of control over their markets.

The United States has tried repeatedly to break down market barriers in Japan.

China has been successful in limiting its home market, while benefiting from open markets, particularly in the United States. China's strategy is to build up high-cost, high-tech exports based on technology (gained from trading foreign technology for access to their markets), while producing cheap goods made by low-cost labor for its rapidly growing domestic market. Foreign goods enter China under strict rules.

The Japanese feel particularly threatened by China's growth. As Harou Shimada, a Keio University economist, bluntly put it:

“China is a horror story for the rest of the world if it simply grows as an exporting nation. Overcapacity will have to be squeezed down. It will be increasingly unprofitable for companies to build new capacity in advanced nations. If the Chinese develop the technology and become productive without wages rising, then they will be a tremendous competitive menace against the rest of the world. If you bring in 1.2 billion workers at those wages, that can destroy the global trading system.” (Quoted in One World, Ready or Not: The Manic Logic of Global Capitalism by William Greider, Simon & Schuster, New York, 1997, p. 162.)

Already, high rates of economic growth in China coupled with low wages have produced a glut in the Chinese market, with goods worth $64 billion stockpiled, representing about one-fifth of China's total production. (“Bloom is Off China's Boom,” Chicago Tribune, February 4, 1997.)

At the same time, the United States is running up huge trade deficits as it attempts to soak up excess commodities. For the first time in a century, in the fourth quarter of 1993, the United States passed a critical threshold. The outflow of financial returns paid to foreign investors on the assets they held in the United States exceeded all of the profits, dividends and interest payments that American firms and investors collected from their investments abroad. In 1994, the annual outflow was negative for the first time since 1914. Trade deficits reached a record volume in 1995. (Greider, p. 201)

A Major Breakdown?

Many of the leading players in the global economy fear the system cannot continue indefinitely without a major breakdown.

Christopher Whelan, a conservative financial economist in Washington, predicts that, "We are headed for an implosion. If you keep lowering and lowering wages in advanced countries, who's going to buy all this stuff? You look around and all you can see is surplus labor and surplus goods. What we don't have is enough incomes. But the only way people find out there are too many factories is when they wake up one morning and their orders are falling. If this keeps up, we're going to face a lack of demand that's worse than the 1930s." (Greider, p. 221.)

George Soros, a billionaire investor who is mentioned frequently on the front pages of the financial sections of the world's newspapers, foresees a general breakdown - the collapse of the global financial system and the trading system with it. He bluntly states: "I cannot see the global system surviving. ... In my opinion, we have entered a period of global disintegration only we are not yet aware of it." (Soros on Soros: Staying Ahead of the Curve, quoted in Greider, p. 248.)

The Internationalization of Capital

The drive toward cheap production - cheap labor (whether it be at gunpoint, in prison, by children or slaves), lax environmental laws, low taxes - drives capital across the globe. With the internationalization of these markets in labor and commodities comes internationalized capital. Even with the end of the Bretton Woods agreement, capital faced national constraints on its movement around the globe. While new technologies made the rapid movement of capital technically possible, the freeing of capital from national controls came from the growing power of the multinational corporations (MNCs). The intense concentration of productive capacity in a handful of corporations has carried forward from imperialism and grown more intense. William Greider estimates that the 500 largest MNCs produce one-third of the world's manufacturing, three-fourths of all commodity trade, and four-fifths of the trade in technology and management services.

These capital flows are not just from the former imperial powers to the former colonies. Foreign direct investment increased almost fourfold in the 1980s, with the largest part being invested in the United States. "Hong Kong" capital is invested in the United States, "U.S." capital is invested in Russia, "Russian" capital is invested in who-knows-where. (Some $150 to $300 billion has left Russia in the past five years, according to one Russian government official - The Nation, March 31, 1997). It is silly to speak of this capital belonging to any nation anymore. The new global regime creates an international class of investors with no tie to countries, only to stable havens where money can be parked and from which it can be moved rapidly.

Under imperialism, capital was "national" in the sense that it was deeply connected to a multinational state. There was U.S. capital and German capital and British capital. This fed the recurring territorial conflicts. Under the new globalization, capital is transnational, or even supranational.

Capital has been increasingly successful in freeing itself from national restraints - from restricted markets, tariffs, taxes, environmental restrictions, and organized labor. Freedom from national controls allows this capital to roam everywhere - freely and quickly - in the search for the highest rate of return. Some $1.2 trillion flows through New York currency markets each day.

As Greider notes:

> "[T]hese transactions are carried out by a very small community - the world's largest 30 to 50 banks, and a handful of major brokerages. ... The new communications technology has created a small, elite community of international finance - perhaps no more than 200,000 traders around the world who all speak the same language and recognize a mutuality of interests despite their rivalries." (Greider, p. 245-246.)

The Emergence of Speculative Capital

One of the key features of this free-flowing capital is the change in the ratio of productive capital to non-productive (or speculative) capital. Lenin noted that one of the key features of imperialism was the emerging dominance of finance capital. Finance capital is the merger of industrial capital and bank capital, under the control of the financiers. It represented the domination of the financiers over the industrial capitalists. Nevertheless, this capital was destined to go back into production. The financiers invest it in order to produce more profit from the exploitation of human labor.

Today, the use of capital for productive purposes is being replaced by capital invested for purely speculative purposes - that is, the hope that its value will somehow rise in relation to other speculative adventures: Tokyo real estate versus baseball cards; or New York stock futures versus rare paintings.
There are still significant amounts of finance capital seeking out profits. The World Bank estimates that between 1988 and 1995 some $422 billion was invested in new factories, supplies and equipment in select developing countries.

Many boats have been lifted by this tide. But the general, historical trend is such that for this capital to generate profits, it must plunge workers into slave (or near-slave) conditions. Thus, it cannot generate the purchasing power necessary to circulate commodities and hence sustain profits or the economy.
Since sufficient returns cannot be made from electronics-based production, increasing amounts of capital seek returns from speculative adventures. The attempt to maintain the circulation of goods through the extension of credit is itself a speculative exercise, a maneuver done in the hope that consumers or debtor countries will eventually be able to pay off their mounting debt.

Noam Chomsky cites estimates that in the early 1970s about 10 percent of the capital in international exchanges was for speculation and about 90 percent of it was related to the real economy, for investment in productive capacity and for trade. By the 1990s, those figures were reversed - 90 percent was for speculation and never destined to be invested in raw materials, or factories, or transportation systems, or for trade. Chomsky also quotes David Felix's study for the United Nations Conference on Trade and Development which cites estimates "that by 1994 the ratio was about 95 percent speculative to about five percent real economy-related." (Class Warfare: Interviews, Noam Chomsky with David Barsamian, p. 106)

According to Grieder:

> "As capital owners and financial markets accumulate greater girth and a dominating influence, their search for higher returns becomes increasingly purified in purpose - detached from social concerns and abstracted from the practical realities of commerce. In this atmosphere, investors develop rising expectations of what their invested savings ought to earn and the rising prices in financial markets gradually diverge from the underlying economic reality. Since returns on capital are rising faster than the productive output that must pay

them, the process imposes greater and greater burdens on commerce and societies - debt obligations that cannot possibly be fulfilled by the future and, sooner or later, must be liquidated, written off or forgiven." (Greider, p. 227.)

A report on global capital by McKinsey & Company, a global consulting firm, estimated that the total stock of financial assets from advanced nations expanded in value by six percent a year from 1980 to 1992, more than twice as fast as the underlying economies were growing. The report estimated that by the year 2000 the total financial stock will triple the figures for the economic output of these economies. [These figures were adjusted for inflation.] (The Global Capital Market: Supply, Demand, Pricing and Allocation, quoted in Greider, p. 232.)

The chief concern of this new speculative capital is a stable currency to protect the value of its money. It demands of governments a deflationary policy - preventing inflation by keeping pressure both on wages and government spending by use of the interest rate.

We have seen the results of this policy in the United States - the growth of long-term unemployment (much of it not showing up in the statistics), the stagnation of wages, the dismantling of social programs, and the sharply growing inequality in incomes. This new, speculative capital is able to set the rules for the world economy because governments have little or no control over the actions of the speculative capital which determine their economies.

New Polarities, New Possibilities

The process of globalization is driven by the dynamics of capitalism. Capitalism's survival rests on the extraction of profit on a constantly increasing scale through the extension of production. While electronics has enabled the unification of the world commodity market (including the labor market) and the financial market - by dramatically cheapening communications and transportation - it also introduces a radical new quality - electronic production. This new element attacks the very foundation of capitalism - the extraction of surplus value from workers - by introducing laborless production.
To maintain profits, capitalists seek out the cheapest production costs (regardless of whether production is done by robots or by human muscle, or whether it takes place in Detroit or in Jakarta). So, as electronics extends throughout the global economy, workers around the world are compelled to compete not only with each other but with their electronic counterparts - robots and automated machinery of increasingly diverse types.

For a number of reasons, employment under these circumstances can actually increase while electronics is at the same time destroying the value of labor power. With electronics driving down the value of labor power, and therefore wages, more members of the household are compelled to enter the job market, or to work past retirement age, or to take on multiple jobs in unsuccessful attempts to maintain a slipping standard of living. Others are being driven to the bottom of the job market by the end of welfare. This is temporarily providing a cheaper alternative to technology.

The capitalist does not care if production is done by the "gratuitous labor of machines" or by the "free" labor of slaves. The critical indicator of the impact of electronics on production is not "employment" statistics, but the polarization of wealth and poverty. With the destruction of the value of labor power and wages, wealth polarizes and the economic center disappears. In this process, capitalism is compelled to destroy whatever social base it may have maintained in the old imperialist center.

A New Proletariat

During the period of imperialism, the main arena of class struggle was the struggle between the peoples of the earth and the imperialist powers. Under globalization, a new proletariat is emerging in the imperialist center, to join ranks with a proletariat in the former colonies - propertyless, with little or no permanent tie to the capitalist system.

This process is, of course, tremendously uneven, with some Third World countries emerging as “tiger economies,” with the standard of living improving for many workers. But overall, the pattern of deepening polarization is becoming clearer.

A U.N. Human Development Report in 1996 noted that even though the world's economy surged during the past three decades, 1.6 billion people (one-quarter of the world's population) are actually worse off than they were 15 years ago. (Chicago Tribune, July 17, 1996.) Thirty-two countries representing a half billion people are buried under unsustainable debt burdens. Richard Barnett estimates that two-thirds of the world's population has neither the cash nor the credit to buy anything of note in the global marketplace. (Global Dreams: Imperial Corporations and the New World Order, Richard Barnett)

This vast majority of the world's population stands opposed to 358 billionaires whose income is equal to the total income of the poorest 45 percent of the world's population. (This statistic was quoted in The Nation, July 15-22, 1996).

While capitalism looks to the electronically united world market to sell its prodigious output, it is at the same time compelled to destroy the world market by driving down socially necessary labor time and, as a result, the value of labor power - and ultimately wages - to the wage of the robot.

The economic middle ground is destroyed, resulting in a handful of international capitalists on one side, and a vast majority of marginalized or destitute proletarians, incapable of purchasing the flood of goods, on the other. Such is the inescapable dilemma faced by capital in the age of globalization.

Temp Workers May Be Able To Join Unions

By Glenn Burkins
The World Street Journal

WASHINGTON -- The National Labor Relations Board is poised to make it easier for the growing number of temporary workers to join labor unions.

Current rules that make it “virtually impossible" for temps to join unions alongside an employer's permanent staff are based on a "flimsy premise” says NLRB Chairman William B. Gould IV.

Today and tomorrow, the board will hear arguments in cases in which the unionization of temporary workers is at issue. While board members won't discuss pending cases, several of them, such as Mr. Gould, have said publicly that they believe existing rules are outmoded in light of the recent growth in the temporary employment industry.

Business groups warn of repercussions -- and a probable court fight -- if the regulations are changed. “If you start messing around in this area,” says Dan Yager, general counsel for the Labor Policy Association, a business lobbying group, “clearly it's going to discourage the use of temporary workers.”

The issue has taken on greater significance with the changes in the temporary staffing industry. The Labor Department says about 2.2 million people worked as temporary employees last year, up from just 417,000 in 1982.

Once limited mainly to clerical workers, temporary agencies today offer a wide range of occupations. Factory workers, engineers, architects, computer programmers, designers and even lawyers can be hired through temporary agencies. Manpower Inc., the nation's largest temporary employment agency, recently said it would begin supplying physicists for some of its high-technology clients. On any given day, Manpower sends more than 165,000 people to work in various companies, says Terry A. Hueneke, the company's executive vice president. It will employ about 800,000 people this year. And, he says, Manpower's billable hours are growing at a rate of about 12% a year. Mr. Hueneke wouldn't discuss the labor cases.

Despite the industry's growth, the labor laws that govern temporary workers have not changed, critics say. For example, if temporary workers are sent into a unionized company, they are prohibited from joining that company's bargaining unit without first getting consent from both the company and the temporary agency that sent them. For labor-law purposes, the two companies are deemed to be “joint employers.” In the cases now before the labor board, union and their lawyers will argue for changing that rule.

In one case, Teamsters Local 89 is seeking to represent temporary workers at American Commercial Marine Service Co.'s Jeffboat division of Jeffersonville, Ind. The Union has represented the company's 600 permanent workers since 1971. Jeffboat, which manufactures tugboats, barges and floating casinos, also employs about 100 temps supplied by TT&O Enterprises Inc.

In an earlier ruling, an NLRB regional director said that because Jeffboat and TT&O were joint employers, the Teamsters would need joint consent to represent the temporary staff. The Union had

argued that since Jeffboat controls virtually every aspect of the work environment, it alone should be considered the true employer.

In papers filed before the labor board Jeffboat called the Teamsters a “financially bankrupt union” looking to collect union dues. The company's lawyer, David W. Miller, says the temporary workers never asked for Teamsters representation. Officials of Local 89 couldn't be reached for comment.

As employers have slashed their payrolls, unions have accused some of hiring temporary workers to avoid paying benefits to permanent staffs. Stephen Lerner, assistant organizing director at the AFL-CIO, calls it a “moral issue,” as well as a legal issue. The current rule, he says, allows employers to "do a half-step" and duck their responsibility for workers.

Mr. Gould, the NLRB chairman, says the rule also has had the unintended effect of widening the economic gap among American workers. “The whole nature of the employment relationship is changing,” he says.

In a second case, the NLRB must decide if 15 temporary workers at M.B. Sturgis Inc., a maker of flexible gas hoses in Maryland Heights, Mo., should be included with the company's 35 permanent workers represented by Textile Processors Local 108. While the permanent staff gets health and life insurance, paid holidays, vacations, and contributions to an employee stock ownership plan, the temporary workers get none of that. Although Sturgis has agreed to include the temporary workers in its bargaining union [sic], the temporary agency that supplies them has not.

Mr. Yager of the Labor Policy Association says most temporary workers have no desire for union representation. “A lot of the people who are in the temporary work force are in it by choice,” he says, “and they are not in it for an extended period of time.” He says Mr. Gould, appointed by President Clinton, is out to “rewrite labor law” as a favor to union leaders.

Aside from temporary workers, the labor board also will hear arguments concerning contract workers, who are not covered by many of the labor laws that protect employees. In recent years, Mr. Gould says, employers have been expanding their definition of contract workers in an attempt to circumvent those laws. The board is expected to rule on the cases sometime next year.

Does Technology Create Jobs?

Two leading economists, MIT's Paul Krugman and the Hoover Institution's David R. Henderson, debate whether jobs lost to technology are met by a net increase in jobs elsewhere in a more productive economy. Krugman, a noted liberal, says maybe in the long run, but for now ordinary workers see their wages falling. Henderson, a conservative, says that the problem is not the elimination of jobs through technology but a workforce with inadequate skills.

Not for ordinary folk

By Paul Krugman

Even the early stages of the Industrial Revolution quickly made England the wealthiest society that had ever existed, but it took a long time for the wealth to be reflected in the earnings of ordinary workers. Economic historians still argue about whether real wages rose or fell between 1790 and 1830, but the very fact that there is an argument shows that the laboring classes did not really share in the nation's new prosperity.

It's happening again. As with early-19th-century England, late-20th-century America is a society being transformed by radical new technologies that have failed to produce a dramatic improvement in the lives of ordinary working families--indeed, these are technologies whose introductions have been associated with stagnant or declining wages for many. The Industrial Revolution was based on iron and steam, while we are living through a revolution based on silicon and information; but in a deep sense the story is probably much the same.

As far back as 1817, the great economist David Ricardo explained how technological progress can raise productivity yet hurt workers; his analysis, suitably reinterpreted, remains valid today.

Here is a modernized version of Ricardo's story: imagine that initially our economy uses a technology requiring that each worker be supplied with $50,000 in capital equipment. And suppose that the current level of savings and investment is just enough both to replace old capital as it wears out and to equip new workers with the same level of capital as those already employed. In such an economy, there will be more or less full employment and a stable distribution of income between capital and labor.

Now suppose a new technology comes along--one that raises the productivity of the average worker dramatically, say by 75 percent. The only drawback is that to use the new technology, a worker must be equipped with much more capital--say $100,000's worth. If wages are a great enough share of costs, companies will find the new technology well worth introducing in spite of the extra cost, but what will it do to the workers?

The answer is that, at least at first, workers will be hurt, because the economy will no longer have enough savings to maintain full employment at the going wage. An investment that would have added two jobs will now add only one, so there will no longer be enough jobs created. The new technology will begin destroying jobs instead of creating them.

Now it's true that the law of supply and demand can still work its magic. In a free-market economy, the prospect of unemployment will drive down wages, and at sufficiently lower wages, employers

will find it profitable to offer more jobs after all. But the point is that these will be worse, lower-paying jobs even though the economy as a whole is richer.

It's also true that higher profits generated by the new technology will lead to more investment, and this may eventually mean higher wages. But the operative word is eventually. If history is any guide, it may be decades before the fruits of a better technology are fully reflected in higher wages. There are, admittedly, some important differences between the early 19th century and the late 20th, but they are less fundamental than they may seem.

What made the Industrial Revolution bad for wages was that it was not only labor saving but also, to use technical jargon, "capital using," because the new technology meant replacing small-scale artisan production with capital-intensive factories, creating a shortage of capital and a scarcity of jobs. Information technology, however, is not especially capital using. Indeed, it often seems to economize on capital as much as it economizes on labor.

The characteristic of modern technology, rather, is that it is human-capital using; it greatly increases the demand for highly educated and exceptionally gifted people. Never in human history have so many people become so rich so quickly, and the rewards to skill and talent have never been larger. But for every Bill Gates or Marc Andreessen, there are thousands who find that technology has made it harder, not easier, to earn a living. Just as the physical-capital-using technology of the Industrial Revolution initially favored capital at the expense of labor, the human-capital-using technology of the information revolution favors the exceptional (and lucky) few at the expense of the merely intelligent and hardworking many.

We could not stop the information revolution even if we wanted to. And in the long run, new technology will undoubtedly raise everyone's standard of living. But that is then and this is now, and as John Maynard Keynes famously pointed out, in the long run we are all dead.

Paul Krugman (krugman@mit.edu) is a professor of economics at MIT and winner of the 1992 John Bates Medal. He has served as senior international economist on the staff of the Council of Economic Advisers and is the author of The Age of Diminished Expectations: U.S. Economic Policy in the 1990s (1990) and Pop Internationalism (1996), reviewed in October's Herring (see "Everything You Know Is Wrong").

Yes, for everyone but the unskilled

By David R. Henderson

Paul Krugman and I agree that as long as wages are flexible--and we agree that in the United States they are--technological change cannot destroy jobs on net. The reason: even if the demand for labor falls, wage rates can and will fall, keeping workers employed. The one exception would be very unskilled workers, some of whom would be priced out of work by the minimum wage. Krugman and I also agree that "capital using" technological change can reduce real wages for workers.

But a theoretical possibility is not the same as a fact. The important question is not whether the information revolution can reduce real wages for workers, but whether it does. This Krugman has failed to establish.

It's true that real hourly wage rates for employees have fallen gradually over the last 23 years. Based on data from the president's Council of Economic Advisers, I compute that the average real wage for production and nonsupervisory workers in the private sector peaked in 1973 at $14 (in 1996 dollars) and is now about $12.13. But these data have two big shortcomings; the effect of both is to understate current real wages.

First, over the last 23 years, an increasing portion of workers' pay has taken the form of benefits--pensions, health insurance, etc.--none of which are counted in hourly wages. Although the Bureau of Labor Statistics reports overall compensation for all employees, not just for production and nonsupervisory workers, the data are illuminating. Since 1980, real benefits, valued at the employer's cost, have risen by 20 percent. Average real employee compensation, including benefits valued at cost, has risen by about 4 percent.

The second problem with the standard data on real wages is that the consumer price index (CPI), used to adjust for inflation, overstates inflation. According to the 1995 Report by the Advisory Commission to Study the Consumer Price Index, between 1987 and 1995 the CPI overstated the inflation rate by between 1 and 2.7 percentage points annually. The CPI does not adjust for the fact that people buy more of those goods whose price has fallen and less of those whose price has risen.

It also fails to adjust for quality improvements and to capture the "Wal-Mart phenomenon"--that consumers can now purchase goods at large chains for lower prices than they used to pay at local mom-and-pop stores. These three factors alone, according to a recent study by Northwestern University economist Robert J. Gordon, bias the CPI upward by about 1.2 percent a year. Assuming this same 1.2 percent bias for every year since 1973, real hourly wages have actually increased from $14 to about $16.50, and real employee compensation has increased by about 40 percent. One of the main reasons for quality improvement, incidentally, is the revolution in technology that has improved cars, made movies available on demand at a fraction of the previous cost, and slashed transportation and communication costs.

Of course, fringe benefits should not be valued at employer cost because they are typically worth less. The employer's portion of social security taxes, for example, is mandated by the federal government and is less valuable to employees than the cash that they could have invested in stocks and bonds. Benefits that are not mandated, such as health insurance, are probably worth less than their cost but are provided because they are a form of tax-free income. Therefore, the picture I painted of rising real compensation is rosier than the reality. But let's put the blame where it lies: not on the information revolution, but on actions like the federal and state governments' increase of social security taxes.

Finally, it may well be true that very unskilled workers earn lower real wages than they did 20 years ago. But the reason is that they have fewer skills than their counterparts did two decades ago. A recent study in Review of Economics and Statistics, by two economists from Harvard and one from MIT, concludes that "a high school senior's mastery of skills taught in American schools no later than the eighth grade is an increasingly important determinant of subsequent wages" (italics theirs). It finds that those who graduated from high school in 1980 are noticeably less skilled than their class-of-1972 counterparts. What are these skills? Not rocket science, but simple computation with decimals, fractions, and percents and recognition of geometric figures.

More government spending on schools is not the solution. The government's approach to schools is the problem. What are we to think of a president of the United States proudly stating his ambition for every student to know how to read by the end of the third grade? Only about half of the nation's high

school seniors have mastered eighth-grade skills, the study's authors note. When a firm has only a 50 percent success rate on the basics, most of us think the customer should go elsewhere.

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The Tiny Islands of Cyberspace: Making the Web Truly Worldwide

By David Zgodzinski

With the help of dedicated entrepreneurs, the Internet is making an appearance in third world countries. Over 186 countries can now be reached by e-mail. Nonetheless, the continents of Africa, Asia, and South America are still tiny islands in cyberspace.

The number of computer hosts on the Internet located in the U.S. has now been surpassed by the number of hosts in the rest of the world. About 98 percent of all the computer hosts on the Net are located in countries in North America, Western Europe, Japan, and Australia--countries that together have only 15 percent of the world's population.

Connecting billions of people in developing countries to the Net will take some work. Three elements are necessary--the right tools, the right rules, and the right people. The Internet doesn't particularly care how the job gets done. The Internet has its own agenda. It wants to grow.

Access is one problem, connectivity is another. If you look at a map of connectivity displaying the physical lines of communication of the Internet, you get a very skewed distribution. Through most of the world, there is very little connectivity and very few central hubs. And then there are the United States.

Internet connections in Europe and Asia are joined to the American coasts to connect to nodes on the American backbone. It's an inefficient system, where, in many instances, communications between neighboring countries must pass through the U.S. backbone.

But that is beginning to change. In June, MCI and British Telecom announced Concert, a high speed global backbone for the Net. Concert's "InternetPlus" backbone will start with the existing BT and MCI networks. There will be a combination of these links in regional "superhubs." Five of the hubs are already under construction. Within a year, these will be expanded to 20 hubs in central locations around the world.

The hubs will have 45-Mbps connections to one another. Eventually, ConcertPlus will offer connectivity to the Internet in 1200 locations in 70 countries, increasing the overall international capacity of today's Internet by 30 percent.

While this high speed network will soon be expanding in developing countries in Asia and the Pacific, South America and Africa will be coming on board sometime in 1997, it is hoped.

In most developing countries, the initial Internet connection and its subsequent growth are the result of the efforts of a small group of people, or even one individual, who has a passionate devotion to the Net. They get the rules changed and implement the technology. These people are the shamans of the Global Village.

The African Continent

Africa has the lowest teledensity (phone lines per population) in the world. The continent has 12 percent of the global population, but only 2 percent of the world's main telephone connections.

In December 1995, AT&T and Alcatel joined forces to put Africa One into motion. First, the plan is to surround the whole continent with an undersea cable, connecting all the coastal areas. Second, all countries in Africa will be connected in a regional network. Third, the African network will be linked to the rest of the world.

Eventually, 35,000 km of fiber-optic cable connecting 41 African nations will handle traffic at 2.5 gigabits per second. If financing arrangements for the project can be arranged soon, construction will begin this year and be finished by 1999. Increased connectivity will go a long way towards bringing the Net to Africa, and vice-versa.

Ghana

Nii Quaynor, a businessman who runs Network Computer Systems in Ghana has begun commercial Internet service in that African country. At the start, Ghana Telecom demanded prohibitively high connectivity charges for an international data link. Quaynor appealed to the representatives of Ghana Telecom and the government minister in charge of communications, and received approval to install and use an international satellite earth-station, thereby reducing costs. In 1993, gh.com was born.

Today, Quaynor's service has more than 800 subscribers and is growing at a rate of about 100 percent per year. Most of his customers are commercial clients, using the Net for basic communications with overseas contacts. They are charged $50 per month for full access and unlimited use. Of the company's costs, 80 percent still go towards its satellite link.

The Internet has created an opportunity for his company's subscribers to win software contracts in the United States; a local company that subscribes to Quaynor's service has used the Internet to win a contract to perform architectural drawing for a Canadian company.

Uganda

Daniel and Lisa Stern are a couple of Americans in Uganda who have started The Uganda Connectivity Project, which has raised money to put together an Internet "road show". The Sterns have outfitted a truck with deep-cycle batteries and a 1000-watt inverter, thanks to sponsorships from the MCI foundation, IBM, and the Reuters news agency, who have donated computers and modems. With the truck, the Sterns will travel to villages in Uganda and introduce kids to the Net.

Education is not free in Uganda, schools are often far from villages and books are scanty. The project will allow computer operations in remote areas, where linking to the Net will be done via mobile phone. Daniel Stern says that one of their goals is to establish learning centers with PCs linked to the Internet. They are still looking for donations of used equipment.

India

Improving the infrastructure is only one piece of the puzzle. It can be more difficult to make changes in the regulations that govern a country's telecommunications system than to change its technology. India is a prime example of how telecom regulations damage the accessibility of the Internet, and thus keep the country out of the loop.

India has well over 900 million people. The country has a connectivity advantage over other developing nations. English, the current standard on the Internet, is spoken by a large percentage of the population. There are many computer literate individuals in the country. The high-tech industry is first rate in India, with many multinationals opening facilities in the country.

All these elements should point to flourishing Internet activity, except for one minor detail. In 1885, The British, then in control of the country, passed the Indian Telegraph Act, which allowed the Indian Department of Communications to completely dominate the industry. They do so with relish, and have been rigid in protecting the monopolies of the country's telecommunications operations. Currently, the only public access commercial ISP in India is VSNL--a government corporation. With a monopoly, access prices were kept high. India has private companies that can resell e-mail access to the Internet but licensing and connection fees are high, so these companies have been forced to charge high prices. In another protectionist tactic, tariffs on communications equipment were exorbitant, and charges for communications prohibitive.

But recently, thanks to concerted lobbying, the Indian government has somewhat loosened the stranglehold of the Department of Communications. Tariffs on computer equipment and software have been relaxed, and the cost of modems has dropped. In December 1995, the Telecom Commission of India decided to allow private ISPs to offer Internet connections. As of yet, none have been sanctioned, but it's in the cards.

Seemingly to gear up for competition, VSNL recently cut their charges in half to about $.90 per hour for full TCP/IP access, and $.30 and hour for a shell account. Now, there's a two-week wait for a TCP/IP account because of the demand. An Indian Internet explosion could follow a further loosening of the rules.

South America

Red Cientifica Internet del Peru is a nonprofit network, owned by 6,000 organizations throughout the country who are users of the service. The Peruvian network started operations in December 1991 with three modems and a 386 computer as a server; in February of 1994, the network was connected to the NSF backbone, and Internet service began. JosQ Soriano is the head honcho of the network. He has been the driving force behind the expansion of its activities into 23 towns along the length of Peru.

The Red Cientifica has 300 phone lines currently operating and wants to have 800 installed by the end of the year. It also has two 512K satellite connections to the Net. "Everybody pays to become a member of Red Cientifica." says Soriano. Internet service is not a gift to these people. It is a privilege that they are willing to pay for.

Red Cientifica has set up group access locations (cabinas publicas) Each cabina is a room with about 40 computers, a printer and an Internet connection available to the public. All the users have full e-

mail accounts. Red Cientifica started with one cabina in Lima, and currently has four in operation. They want to have 23 eventually, one in each of the major municipalities that the network serves. The only losers are the telephone monopolies and the postal service, who see their total control over communication threatened by the Internet.

Everybody gains from the growth of Red Cientifica. The towns gain because residents are now able to communicate with the rest of the world. The people of Peru gain. Education, health services and businesses gain. The only losers in the equation are the telephone monopolies and the postal service, who see their total control over communication threatened by the Internet.

Soriano is a major force in the Latin American & Caribbean Networking Forum. He says that one of the group's major objectives is relaxing Telecommunication laws, and deregulating telephone monopolies in the region.

Eastern Europe

The Open Society Institute is a charitable foundation set up by George Soros, the billionaire investor originally from Hungary. He has set up philanthropic organizations to fund projects that aid the cause of freedom, peace, and economic development. These projects are predominantly in Eastern Europe, but have recently expanded to other countries such as South Africa. Open Society Institute is concerned with opening Internet access for developing countries.

The Institute has spent about $14 million funding projects in 68 countries, and doesn't waste much money on a bureaucracy. The organization has representatives in every client country that bring a potential project to the attention of the funders. The funders choose the project, but the Open Society Institute does not dictate exactly how the money is spent. It funds access to the Internet, training, and to a lesser degree, equipment. The Society offers from $50,000 to $100,000 per project. "That can go a long way." says Jonathan Peizer, chief information officer of the organization. "For $25,000 to $50,000, you can put up an e-mail BBS in Tadzhikistan or Bosnia. For $50,000 you can you can sponsor a 64-Kbps Internet link in central Europe."

Romania has been a particular success for the foundation. Peizer estimates that 100,000 people in that country have been given access to the Internet as a result of the Open Society Institute's efforts.

There are four VSAT access points in different cities in Romania, and the Institute foots the bill for connectivity. In each location, there are rooms with PCs that have full Internet access. Each city has a club whose members are given e-mail accounts. More than 200 schools are users of the network, as well as hospitals, museums, and some businesses.

"Our main concern is to promote the use of Internet and to force the commercial providers to lower the prices, which were 300 times the price of the ones in Bulgaria, and more than ten times higher than in western Europe" says Daniel Buleu, a representative of the Open Society Institute in Romania.

One busy location funded by Open Society in Bucharest has 35 phone lines for dial-up access. Peizer says "Romania has a very low penetration of computers. In effect, if parents want to buy a computer for their child, they have to sell their car. But it's not the number of PCs in a country that's important. It's the access to PCs."

There are thousands of technicians, entrepreneurs, and philanthropists working to increase Internet access in the developing nations. They all have different goals, but one common denominator. They want to make connections.

The Internet will be much more important to the poorer countries of the world than it is to their wealthier neighbors. It's a type of reverse colonialism. For a relatively small cost, citizens of developing countries can exploit industrialized wealthy nations for an endless supply of that precious commodity--information.

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UN Committee Statement on Information Poverty and Inequality: Access to Information, Tools and Services Must Be Worldwide

1. The world is in the midst of a communication and information revolution, complemented by an explosive growth in knowledge. Information and knowledge have become a factor sui generis in societal and economic development. As generic technologies, information and communication technologies (ICT) permeate and cut across all areas of economic, social, cultural and political activity. In the process they affect all social institutions, perceptions and thought processes. Globally the information and communication sector is already expanding at twice the rate of the world economy. Decreasing costs of increasingly powerful, reliable hardware and software, as well as the fact that much hardware has become a desktop item, will continue to drive the use of information and communication technologies, facilitating access by ever wider segments of society. But this tendency can have profound benefits only if gains in physical access are accompanied by capacities to exploit these technologies for individual and societal development through production and dissemination of appropriate content and applications.

2. The communication and information revolution opens up entirely new vistas for the organizations of the United Nations system; it will bring about a dramatic shift not only in the way our organizations will operate in the future, deliver services and products, but also collaborate and interact with each other and other actors. Indeed, the multilateral system as a whole - and specifically development cooperation - has reached a threshold where our future orientations, strategies and activities have to be revisited and adjusted to the new circumstances and opportunities. We are resolved to respond readily and effectively to these new challenges.

3. We recognize that knowledge and information:

- represent the life blood of the emerging global information society and its attendant infrastructure:

- are the principal resources of the burgeoning information economy;

- are at the heart of the intensifying globalisation trends--and drive the emergence of a tele-economy with new global and societal organizational models (telework, telecommuting, teleservices, telemedicine, distance education, teletraining, teleshopping, telebanking, business facilitation, trade efficiency, trade information etc.); in many instances, physical location is becoming irrelevant for the ability to receive or deliver products and services:

- will increasingly affect the international division of labour, determine the competitiveness of corporations and national economies and generate new growth patterns and paradigms: and will have strategic consequences for the global power constellation. Knowledge, more than ever, is power. Information about what is occurring becomes a central commodity of international relations--and determines the efficiency and effectiveness of any intervention which is a particular challenge for multilateral actors.

4. Information is not a free good. Comparative advantages are henceforth expressed in the ability of countries to acquire, organize, retrieve and disseminate information through communication, information processing technologies and complex information networks to support policy making and

the development process. Abilities in these areas may allow the prevention and resolution of regional and other conflicts or deal with new challenges like international crime, terrorism, proliferation of weapons of mass destruction and environmental damage by charting better informed decisions - all of which are of utmost concern to the organizations of the United Nations system.

5. We are profoundly concerned at the deepening mal-distribution of access, resources and opportunities in the information and communication field. The information and technology gap and related inequities between industrialized and developing nations are widening: a new type of poverty - information poverty - looms. Most developing countries, especially the Least Developed Countries (LDCs), are not sharing in the communication revolution, lacking as they do:

- affordable access to core information resources, cutting-edge technology and to sophisticated telecommunication systems and infrastructure;
- the capacity to build, operate, manage, and service the technologies involved;
- policies that promote equitable public participation in the information society as both producers and consumers of information and knowledge; and
- a work force trained to develop, maintain and provide the value added products and services required by the information economy.

We therefore commit the organizations of the United Nations system to assist developing countries in redressing the present alarming trends.

6. Over the past decades, the organizations of the United Nations system have carried out many projects at various levels incorporating communication and information technologies. However, today we must acknowledge that often this was done in a rather uncoordinated manner. We therefore perceive an urgent need for a more strategic and systematic approach to ICT and information management, based on a strengthened collaboration among the organizations of the UN system.

7. We have concluded that the introduction and use of ICT and information management must become an integral element of the priority efforts by the United Nations system to promote and secure sustainable human development for all; hence our decision to embrace the objective of establishing universal access to basic communication and information services for all. ICT and effective information management offer hitherto unknown possibilities and modalities for the solution of global problems to help fulfill social development goals and to build capacities to effectively use the new technologies. At the same time, infrastructure and services of physical communication, in particular postal services, are a means of communication widely and universally used throughout the world, particularly in developing countries. Postal services are vital and will remain, for the foreseeable future, essential to promoting trade, industry and services of all kinds. Indeed the value of postal services will be further enhanced as new services, such as Ahybrid mail@ combining electronic transmission and physical delivery, gain ground.

8. Individually and jointly, our organizations are already carrying out or are planning at the national level to embark on various projects and activities to highlight the catalytic role multilateral organizations can and must play in this increasingly vital area. We pledge to do more by joining forces in a variety of fields, e.g. in agriculture, education, health, natural resources and environment management, transport, international trade and commerce, employment and labour issues, housing,

infrastructure and community services, small and medium enterprise development and strengthening of participatory arrangements (see attachment). It is our intention and determination to demonstrate the viability and suitability of the new technologies and effective information management - especially by reaching out to and targeting the rural areas and most impoverished segments of society so often bypassed by the benefits of technological progress. Unless we are able to show that ICTs make a difference and reach out to more poor people or deliver better services to larger segments of society, the potential of ICTs and information management would remain just that.

9. Harnessing and spreading the potential of the new communication technologies to countries, especially in the developing world, in a timely, cost-effective and equitable manner will be a daunting challenge. The telecommunication infrastructure is weak in virtually all developing countries. The 59 lowest income countries (which account for about 56% of the world's population) share only 7% of the world's telephone mainlines. Excluding China and India, the 57 lowest income countries (which together account for one-fifth of the world's population) have one-hundredth of the global telephone main lines. Wherever there is connectivity, it is limited to major cities, the waiting lists are long and there is no indication that the situation will improve dramatically soon. Within the limits of its resources and priorities, the UN system stands ready to assist governments in designing national policies, plans and strategies to facilitate and guide the development and management of an appropriate national information infrastructure in accordance with their needs and traditions.

10. ICT hold the prospect of an accelerated introduction of certain state-of-the-art technologies superseding the step-by-step process of transferring know-how and technologies which has dominated industrialization processes. Successful leapfrogging will allow developing countries to advance, bypassing stages of technology development. While being aware of the considerable practical hurdles, we are nevertheless determined to assist our developing country partners in this quest.

11. We are equally conscious of the imperative to build human and technical capacities to enable societies to facilitate access and make best use of the new multimedia communication resources. The rapid expansion of the Internet and its interactive character have introduced a dramatic paradigm shift in retrieval, handling and dissemination of information. The technologies make it possible for those who need information and knowledge to look for it on an electronic network and download what they need, when they need it. The explosion of the Internet and the World Wide Web (WWW) have created an easy to use communication interface for linking together computers in every part of the world for communications, information and data exchange for those who can afford it.

12. The emphasis on networks such as the Internet should however not distract from the potential role and contribution other ICT can make in advancing sustainable human development. Advances in CD-ROM technology, for example, have made multi-media and large scale data transfers accessible to developing countries, even to areas where there is no telecommunication connectivity. Many of the multimedia options - and especially the Internet - depend on the availability of reliable, powerful telecommunication connections with a sufficient bandwidth as well as access to electric ity grids or renewable energy (e.g. solar power), which are other limiting factors in the poorest areas. Widespread illiteracy, diverse cultures and linguistic differences pose yet different obstacles for the introduction of new technologies on a universal basis.

13. Massive investment in telecommunication networks worldwide has helped to link most developing countries to international telecommunication networks, albeit in most cases only their capital cities. Thus far this connectivity invariably bypasses rural areas and hinterlands of developing countries, where the incidence of poverty is highest. We believe therefore that the expansion of

domestic telecommunication infrastructure to rural areas and its connection to reliable international networks must become a top priority for governments, the private sector and multilateral and bilateral development organizations. Unless telecommunication systems can be expanded, access will be confined to an urban, literate elite in developing countries, bypassing rural areas and the poor. Here, rapidly emerging digital satellite systems offer new solutions.

14. An indication of the magnitude of investment required is seen by the estimate that in Sub-Saharan Africa raising teledensity to 1 telephone mainline per 100 inhabitants (from the current 0.46 mainlines per 100 inhabitants) would require an investment of US$ 8 billion. The estimate assumes, however, that the cost of a mainline closely mirrors the prevailing international prices, whereas experience shows that typically the cost tends to be about three times higher in Sub-Saharan Africa. The enormity and scale of the challenge to provide universal access in basic communication and information services to the developing world would thus make it advisable to focus on the community level and on reinforcing major development missions such as education, rather than the household or individual level. Even so, harnessing and spreading the potential of the new information and communication technologies to developing countries will be a daunting challenge.

15. The organizations of the United Nations system alone cannot undertake this massive and exceedingly costly investment. Such investment will help alleviate poverty and create new livelihoods and open up new markets. We call upon the private sector, governments, civil society and other development organizations to engage with us in a purposeful and systematic endeavour to shape and manage this process by:

- establishing and promoting a common global vision and broad-based awareness of the changes upon us and articulating a compelling vision and strategy of how new technologies can be made to benefit all countries, particularly the poorest; building of national human, technical and economic capacities to facilitate access to and utilization of ICT in developing countries;

- promoting multimedia ICT in the delivery of programmes advancing sustainable human development, especially to rural areas; and

- promoting with the participation of the private sector, the creation, management and dissemination of strategic information and data pertaining to the various dimensions of development - globally, regionally and nationally and at the community level.

16. We are conscious of the fact that modern communication links - and especially Web-based approaches - will materially impact on programmes, programme content, modalities and quality of delivery - and hence on the future of multilateral cooperation and technical assistance per se. For our part, we will accelerate our ongoing internal reform and change processes to create modern, cost-effective and globally networked organizations involving a strengthening of our in-house technical capacities and changing staff attitudes and perceptions, especially among senior managers. Another objective will be to strengthen ties and intensify communication among our far-flung offices opening up opportunities for decentralisation and for an instantaneous presence of technical backup and support.

17. Beyond, we intend to harmonize and coordinate our strategies for modernising and enhancing capacities and effectiveness. The objective will be to create a United Nations system-wide Intranet

(Internet for internal usage) to facilitate cooperation among the organizations to ensure integrated exploitation of competencies of organizations and coordination at national level. We shall seek to promote cooperation among our respective organizations through the use of compatible systems which we already pursue through the separate mechanism of the Information Systems Coordination Committee. We aim to ensure the compatibility, accessibility and convergence of communications and computer-based systems.

18. All this must be complemented by constantly updated and well managed web-sites for each of our organizations offering hyperlinks to relevant web-sites both within the UN system and outside. This will confer competence and global authority to our organizations in the electronic age. Indeed, as assessing reliability becomes difficult with more than 65 million web pages on the Internet, the UN system should become web focal points, each in their area of competence. We must strive to make our web sites the foremost entry points for information on poverty, development and sustainability and universal human values and heritage The Information Systems Coordination Committee, which was established in 1994 with the intent of harmonizing approaches of UN organizations and facilitating access to UN related information, has made a good start.

19. We also need to explore and comprehend the implications and potential of the ICT era. Do rapid technological advances trigger the emergence of a right to communicate and a right to access information? What are the consequences for the global labour market, including the gender impact and the role of trade unions, and the international division of labour; the prospects for access to global markets for goods, products and services from developing country economies; opportunities for global sourcing; the scope for participatory approaches involving youth, local and community groups, women and indigenous organizations and other disenfranchised groups; the impact on the elderly; the consequences for traditional postal services; the dimensions of international copyright and trade in services?

20. At present, innovation in terms of ICT technology choices, approaches and content responds by and large to the needs and perceptions of industrialized countries and their business sector. We suggest that innovations for both hardware and software must also become demand- and needs-driven to be able to respond to development objectives and needs. This shift from supply-driven to needs driven approaches must become a global priority and influence the direction and pace of future innovation. Only then can ICT take hold and make a significant impact in developing countries - after all the markets of the future. Among others, this will require the design of products apt for use in electricity-poor environments (including hardware independent from electric power such as solar-based or crank-technology driven) and for use by illiterate people (facilitating accessibility through iconographic software and culturally and linguistically diverse content). But partnership and alliances will be driven both by the technical and financial realities.

21. Thus, we are particularly concerned by the staggering financial needs required to narrow the present gap between information haves and have-nots. A scarcity of funds and insufficient investment flows inevitably hamper the modernization of telecommunication networks and the introduction of promising technologies for advancing sustainable human development. As official development assistance flows are not projected to increase dramatically over the next years, we must stimulate innovative approaches to raise a critical mass of resources.

22. In our view, the sheer magnitude of the task will necessitate the urgent formation of new and novel cooperative mechanisms:

- industry alliances spanning across developed and developing countries; and

- collaborative partnerships across traditional lines - between the government, the private sector, non-governmental organizations, foundations, academic entities, actors of civil society and intergovernmental and international organizations.

23. We, the heads of the organizations of the United Nations system, have agreed to pursue cooperatively, and in a more systematic manner, the development of strategic approaches to the broad issues of the global information economy and society; therefore, we have agreed to commit ourselves to improving universal access to basic communication and information services.

24. In order to demonstrate our ability to bridge the information gap, we have agreed to undertake through coordinated action, at the country level, pilot projects in the broad areas indicated in the Annex.

25. The involvement of Member States is essential in responding to the challenges of change. We therefore invite the Secretary-General of the United Nations, in his capacity as Chairman of the Administrative Committee on Coordination, to bring the Statement to the attention of the General Assembly, with a view to seeking its endorsement. Executive Heads will also submit the Statement to their respective Governing Bodies.

Attachment

INDICATIVE AREAS FOR POSSIBLE PILOT PROJECTS

1. **Interactive long-distance education and learning**: Conventional teaching and learning methods are increasingly unable to respond to the rising demand for learning, driven by burgeoning illiteracy, a dearth of well-qualified teachers and faculty, shrinking public funds for the education sector and the growing acceptance of the concept of life-long learning in a world driven by rapid change. At all levels of the educational process, long-distance education can become a viable complement to conventional schooling and training - in particular reaching out and delivering education services to isolated countries and regions, which often are the poorest. Where even television may prove to be unaffordable, one must rely on radio and the development of community-based media, especially rural radio.

2. **Telemedicine**: Telemedicine comprises opportunities for medical practice and education through the combination of telecommunication and medical technologies. Telemedicine allows interactive audiovisual communication between physician and practitioner in distant locations, facilitates the exchange of medical information for research and educational purposes and enables diagnostic imaging and clinical analysis from distance to compensate for a lack of specialists or dispense advice to doctors. Electronic means may thus help to improve the quality and delivery of health and reproductive services to rural areas. Access to computer and telecommunication services can help transform the role of health workers and enhance the quality and outreach of health services and preventive health care in underserviced rural communities.

3. **Telebanking and micro-credit schemes**: Telebanking can assist banks to adjust to the needs of the poor and communicate with the illiterate and poor at the village level and to promote micro-credit schemes. The available technology is tailor-made for a market characterized by a vast, impoverished and mostly illiterate rural population, high crime and widespread fraud

4. **Environmental protection and management**: Environmental protection and management is a wide field for various applications of information technologies, including sustainable forestry and logging practices, waste management and disposal, support to agricultural extension services, water resource management, managing irrigation and natural resource exploitation.

5. **Participatory processes, arrangements and good governance**: Communications is not only a means to disseminate knowledge, information and values, it is also a basic component of all democratic societies. Its instantaneous character is bound to affect decision-making in political, economic and business spheres. It will equally impact on democratic (or autocratic) systems and governance structures, their responsiveness, transparency and accountability and strengthen participatory and approaches within civil society, empowering especially women and youth. The technology is apt to create novel structures at the community level to manage individual and public affairs by all stakeholders in sustainable development and empower those most affected by poverty through broad-based access to information and partners.

6. **Virtual laboratories for solving development problems**. New methods of work which were still unthinkable just a year ago are now possible. By combining the Internet, virtual reality, real time 3D computing, Net-phone technologies, groupware and virtual team work, it is now possible to create permanent "invisible colleges" of scientists working on critical research subjects, at relatively little cost. The principal objective is to link researchers with the special needs and knowledge of the developing countries to the infrastructure and practices already fly established in the developed countries, in order to provide access to scientific know-how and information more quickly, on a larger scale, in an interactive format and to disseminate it most rapidly. These techniques are one solution to the South-North brain drain, allowing scientists from the South to be associated virtually in all key discussions taking place in the world research community.

7. **Universal access to world's knowledge and culture**. Public information institutions, which are natural foci for access to information needed for development, have not been able to exploit their potential to the full in developing countries due to immensity of needs and scarcity of resources. Information and communication technologies provide the institutions with the means to promote cost-effective, development-oriented information services for all sectors of society, building on networking at the national/regional levels. Of particular importance is public domain information that the info.-market seems to neglect, for different reasons: insufficient potential profitability, small readership (or more paradoxically), the public nature of the original data. Such information should be inventoried, digitized and accessed with Internet servers through the support of appropriate public policies on copyright issues related to information technologies, the development of electronic cultural industries, and promotion of the Internet as a public utility accessible to all at the lowest possible cost.

This is a recent statement on universal access to basic communication and information services from the UN's Administrative Coordinating Committee - ACC

Grappling with the Net: Blacks, Latinos, Women & The Need for Universal Access

By River Ginchild
Third Force Magazine

You can now confidently say “Welcome to the planet” to anyone who has not heard of the Internet. Nearly every household in the country has been bombarded by shrink-wrapped diskettes and CDs offering “free trial access” to the Net, as it's commonly called. Yet in spite of the heavy media coverage of on-line culture and the business world's newfound obsession with Internet-related companies and activities, fewer than 10 percent of North Americans actually have any kind of meaningful access to the Net. The Internet may be the main component of the information superhighway, but making the conversion from what is now a limited-access road to a true public-access thoroughfare will require some work.

Understanding the language of the Net and being able to utilize its material are rapidly becoming part of a new basic survival literacy. Every field of employment has been changed by computers and computer-mediated communication. However, telecommunications-industry marketing is primarily geared toward “early adapters”-- those who can easily and readily purchase its products and services. In fact, the average annual income of “Net households” is approximately $60,000. According to a recent study by analyst Kofi Asiedu Ofori, electronic redlining (i.e., bypassing poor communities) “will contribute to the economic decline of impoverished city neighborhoods and create isolated islands of 'information have-nots.'” A 1995 study by the Rand Institute stated that without government intervention to close the widening gap, the nation will soon be experiencing “information apartheid.”

Private Party or Public Revolution?

Many technically minded activists claim that the Net has the potential to be a forum for revolution, but at the moment it's still largely a reserve for the early adapters. During a recent panel on universal access at the Ethics of the Internet conference in Berkeley, Calif., the question “Aren't you afraid that multiculturalism [on the Net] will slow us down?” was shamelessly posed by a member of the audience. At that moment I knew that I (one of two people of African descent in the audience of approximately 150) wanted to be a force in bringing more people like me on line.

The cost of being on line is a major factor in the underrepresentation of some communities on the Net, but the lack of relevant information on the Net also contributes to the lack of participation. According to the Rand study, approximately 13 percent of African American, Latino and Native American households have computers, compared to 31 percent of White and 37 percent of Asian American households.

While race and ethnicity as indicators of on-line access have remained constant in the last several years, income and educational status are becoming better indicators. “There is good news and bad news,” says Art McGee, coordinator of the African Network of the Institute for Global Communications. “There is an explosion of people of color on line, but there are many who are slipping through the cracks. These are the people who have much more than technology missing in their lives.” McGee says he dreams of a future in which technology will be used for communication between African peoples throughout the world, free of the media filters that currently prevent us working together.

Countering the commercial focus of many areas of cyberspace are some exciting telecommunications projects focusing on social and economic justice issues. The Women's Economic Agenda Project (WEAP) in Oakland, Calif., is launching the Women and Technology Program to provide women with computer education and training and involve grassroots leadership in community revitalization. Recently, the Berkeley Macintosh Users Group (BMUG), which is "in the business of giving away information," started a Computer Placement Program, in which BMUG gives donated computers to low-income families and offers follow-up training and technical assistance.

Randy Ross, a consultant and member of the Smithsonian Institution's National Museum of the American Indian Information/Technology Committee, draws a parallel between Custer's 19th-century raid of the Black Hills and the "elite techno-barons of the end of the 20th century." Ross, a South Dakotan, warns that the privatization of the electronic world is likely to result in high-cost access in rural areas. He urges that demonstration projects be deployed in these underserved communities. One example is the way the Native American Public Telecommunications Company has worked with Native Nations to come up with recommendations for ways to get Native Americans on the Net, such as local community networks serving rural areas.

LatinoNet is a telecommunications network that primarily serves the Latino community's nonprofit sector, but America Online refused to allow the network to operate a "public area" on AOL, according to Ana Montes, a former LatinoNet systems administrator, "because they felt that we could not generate enough on-line time from our members." "It was not enough that we got a lot of people to sign on," she said. "We do not encourage our members to spend a lot of time on line with any service. We educate them on how to use the Internet effectively to get what they need and to use it as a vehicle of empowerment. Our slogan is 'get on, get in, do what you need to do and get off.'" When Montes asked why AOL did not expand into Latin America, she was basically told that the corporation "did not believe that the technology was there yet, or enough users to guarantee high profits."

The idea of "no taxation without information" sparked the creation of Austin Free-Net according to its executive director, Sue Beckwith. While the idea of a free network had been floating around Austin, Texas' digerati for a while, lack of time and funding prevented its realization. In 1995 the city committed funding to start the Free-Net when it recognized that many residents were being shut out of civic participation on line. The project's goal is to have Internet access in all public libraries, public-housing learning centers, job training centers and even barber shops in order to involve traditionally underserved communities. Currently, the city's World Wide Web site is updated daily with information on proposed ordinances and schedules for public hearings and city meetings. Residents' excitement for the program is indicated by the more than 100 community volunteers the project has attracted in its first year.

Use It or Lose It

Despite these progressive efforts it is likely that low-income people will be riding coach on the Net for a while longer. The older-model computers and modems that many community and nonprofit groups operate may be adequate for E-mail. But these same groups are often not equipped to process the graphics, video and sound features available on the World Wide Web. The reality is that universal access won't truly be attained unless and until every community is equipped with the technology to produce, create and disseminate information, not merely to passively consume it. Rates and equipment must be made affordable--and training must be readily available--in order to productively

apply the technology. Once this is achieved, we must continually redefine access as the technology advances.

Everyone, whether on line or not, can contribute to the goal of universal access. If you have skills, share them! Invite people to your home or office, and give a demonstration. If you are not connected yet, visit your local public library. Many have computers that allow patrons to access the Internet. Nonprofit groups can get connected with volunteers with expertise in both hardware and software through San Francisco-based CompuMentor, which has affiliate projects in Chicago; Boston; Schenectady, N.Y.; New Orleans and Bellevue, WA. We all can work with progressive media organizations to assure universal access. Once you are connected, produce your own content! Setting up a Web site or a discussion group is not rocket science. I set up a site called Digital Sojourn because I wanted to see a place for myself and other women of African descent on the Web. I had only seen one or two other pages set up by Black women when I put my first page up in June 1995. A year later, the World Wide Web is still overwhelmingly white and male, but every day there are more women and people of color online creating exciting material. I did it. You can do it.

Here's a small sampling of treats for the mind, the eye and the ear!

Digital Sojourn, a “liberation technology” site, is focused on increasing the participation of people of African descent in computer-mediated communication and in using the technology as a tool in closing distances among all people promoting social and economic justice.

In the AfroAm Family Album, hundreds of people of African descent have written inspiring messages. The Album is related to a discussion group that examines “current events by exploring the complicated intersection of race, class, gender, and culture.”

At the Oyez site you can hear the U.S. Supreme Court's grappling with major constitutional cases including New York Times v. Sullivan, Furman v. Georgia, and Federal Communications Commission v. Pacifica Foundation.

The EZLN website, is a wealth of information on the Zapatista uprising and includes communiques, in Spanish, English and German.

Planet Peace, run by Indigenous community organizers and activists, provides a vast array of information focusing on Indigenous and Environmental grassroots initiatives and cultural preservation. The site also includes sound clips of the music and poetry of John Trudell.

Conduct research with WebActive, a comprehensive index of progressive sites.

If all this gets you primed to take to the streets, don't leave home without downloading the National Lawyer's Guild Demonstrator's Manual. I'll see you there!

River Ginchild is the founder of Digital Sojourn. She is a member of the community advisory group of Berkeley Public Library's Internet Project and is an attorney with Legal Services for Prisoner's with Children. The hypertext version of this article can be found at http://www.digitalsojourn.org/profiles/access.html.

Green Taxes Help Achieve Environmental Goals

By Harald Agerley

Green taxes seem to be effective in achieving environmental goals and should be used more often.

A continuing increase in the use of environmental taxes can already be recognized over the last decade. However, there are political barriers to their implementation but these can be overcome by careful design and extensive consultation. These are some of the findings of a report on environmental taxes published by the European Environment Agency (EEA)

The findings are based on evaluation studies of 16 environmental taxes that have been identified and reviewed by the EEA. These taxes have been environmentally effective (achieving their environmental objectives) and they seem to have achieved such objectives at reasonable cost. Examples of particularly successful green taxes include those on sulphur dioxide and nitrogen oxides in Sweden, on toxic waste in Baden-Wurttemberg-Germany, on water pollution in The Netherlands, and on the tax differentials on leaded fuel and 'cleaner' diesel fuel in Sweden.

Although the EU's Fifth Environmental Action Program (1992), "Towards Sustainability," recommended the greater use of economic and fiscal measures for environmental purposes, there has been little progress since 1992 in the use of environmental taxes at the EU level. At the national level, however, there has been a continuing increase in the use of environmental taxes over the last decade, with a particular acceleration over the last 5-6 years. This is mainly apparent in Scandinavia, but it is also noticeable in Austria, Belgium, France, Germany, The Netherlands and the United Kingdom. Still, the overall use of environmental taxes as a percentage of total taxes is small (1.5 percent in 1993) and only slowly increasing. This figure does not, however, take into account energy-related taxes which had a share of 5.2 percent of total taxes in 1993 with a gradually increasing tendency.

These are the main conclusions of a report on environmental taxes ("Environmental Taxes: Implementation and Environmental Effectiveness," EEA Environmental Issues Series no.1, Copenhagen 1996) as published today by the EEA. The report was requested by the Committee on Environment, Health and Consumer Protection of the European Parliament (EP).

The report was presented on the 3rd October 1996 at an international conference of representatives of parliamentary environment committees from EU Member States, as well as members of the EP/Committee. The conference was organized by the Environment and Regional Planning Committee of the Danish Parliament (Folketing). The EEA report provides an overview of the main issues involved in environmental taxes, with a particular focus on their environmental effectiveness and on the political barriers to their implementation and options of reducing them. It also emphasizes the value of non-energy taxes.

In addition to their environmental effectiveness, green taxes could deliver improvements in three key areas of public policy: innovation and competitiveness, employment, and the tax system.

Environmental taxes can thus deliver a multiple dividend. Moreover, as environmental concerns move from point-source emissions and problems, such as industrial emissions from pipelines and chimneys, to include more diffuse and mobile sources of pollution, such as solid waste, or from the agricultural and transport sectors, there is increased scope for the greater use of green taxes, as well as other market-based instruments, in order to achieve environmental targets, both at the EU and the

national level. The use of environmental taxes can be expanded in three main ways: 1) their extension to more European countries; 2) increasing their harmonization and compatibility at the EU level; 3) developing new areas for green taxes, e.g., on aviation, shipping and road tranport, tourism, land use, water resources, minerals and hazardous chemicals.

There are, however, several important political barriers to the introduction of environmental taxes, particularly energy taxes:

1) perceived impacts on competitiveness and low-income groups;

2) perceived conflicts between national taxes and EU or world trade rules;

3) the perception that taxes have to be high if they are to work;

4) the EU unanimity rule when voting on fiscal measures; existing subsidies and regulations, as well as other policies and cultures.

However, most barriers to implementation, especially of energy taxes, such as the potential negative impacts on competitiveness, employment (particularly on specific sectors or regions) and low income groups can be overcome by:

1) careful design;

2) the use of environmental taxes and respective revenues as part of policy packages and green tax reforms;

3) gradual implementation;

4) extensive information of and consultation with all parties concerned.

The EEA recommends that more evaluation studies of environmental taxes are carried out since only a few have been made until now. Also, more independent reviews of the environmental effectiveness of green taxes would help gain more experience. This could then be used to help guide the wider application of environmental taxes as advocated by the EU's Fifth Environmental Action Program.

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Here Comes the Sun: Solar Energy's New Dawn

By Angela Bleasdale
Financial Times 5 June 1996.

Solar power, for decades regarded as environmentally worthy but uneconomic, is increasingly being seen as a viable energy option with vast commercial potential. In spite of hundreds of millions of dollars of investment during the past 20 years, the world market is still small. Only about 70MW of photovoltaic (PV) cells were produced last year for solar power -- enough to power a small city such as Oxford in the UK.

Yet a combination of new technology developments, rising demand in developing countries and measures by western governments to kickstart their own markets is generating a brighter future and a potential multi-billion-pound market.

According to Strategies Unlimited, a California-based consultancy, the industry has the potential to grow to 1,600MW by the year 2010, under certain conditions. The forecast was released last month at a PV convention in Virginia, organised by the US Institute of Electrical and Electronic Engineers.

Growth like that would be a shot in the arm for the PV industry. For several years, world production has shown steady year-on-year growth of about 15 per cent, but manufacturing capacity still exceeds demand. Globally, there is an estimated annual turnover of just 450m ($680m), according to the Energy Technology Support Unit at Harwell in the UK.

It is a little more than a cottage industry, says John Harford, manager of strategic planning at BP Solar International, a subsidiary of British Petroleum, the UK-based oil group.

PV enables light to be transformed directly into electric power -- when light falls on to the solar cells' thin film of treated semiconductor material (usually silicon), electrical charges are generated and conducted to an external grid.

Much of today's demand comes from remote communities not linked to the national grid in industrialised and developing countries.

Philip Bouverat, commercial director at the Intersolar Group, a specialist solar electric company, says the markets in developing countries are large and growing, and there is a great need for low-cost solar devices to bring electrification to rural communities.

In Indonesia alone, an estimated 11m families are without electricity. Depending on the volumes, the cost of some solar devices could be as low as $3 per watt, says Bouverat. He says that, as volumes increase and the price approaches $1 per watt, solar will become competitive with conventional energy.

At present, solar energy costs about 50p per unit (kWhp) as an installed working system. That compares with approximately 7p per unit for conventional electricity (nuclear and fossil fuel) and 20p per unit for wind-generated power.

In western countries, expansion of the market could lie in grid-connected applications, where PV-generated electricity can be fed back to the national grid. Harford identifies two such applications, the first being centralised PV stations, regarded as the holy grail by many in the industry.

But a more likely application in the shorter term would build on PV's main advantages -- power generation at point of use, avoiding distribution and transmission costs, and the fact it can be integrated into most urban buildings.

It is this area, with its substantial market potential, that has caught the imagination of the European PV industry. Solar panels can be located in the facades or roofs of commercial or domestic buildings to generate a portion of a building's electricity needs.

Richard Page, the UK junior energy minister, supported this view at a recent PV conference in London. He emphasised the UK's commitment to renewable energy, including solar, which was reflected in such government projects as the Technology Foresight programme and the Department of Trade and Industry's New and Renewable Energy programme.

The DTI helped finance the l.5m conversion of a building in Newcastle upon Tyne into the UK's first solar-power office block Page said it showed that office buildings will be able to generate one-third of their electricity needs from PV cladding.

But Greenpeace, the environmental lobbying group, says two-thirds of the UK's present electricity production could be generated by PV if it were deployed wholesale in homes and offices.

Harford says the industry faces a chicken and egg problem -- PV-generated electricity is still more costly than that from fossil-fuel power stations, but, if manufacturers were guaranteed sustained demand, they would invest in high-volume production, reducing costs dramatically.

The US Department of Energy has established a joint programme with the utilities to create what it sees as a necessary virtuous circle. It intends to double sales for solar products in four years and more than double the number of utilities using PV. It spent about $88m (58m) on initiatives in 1995 and its cumulative expenditure is approaching $880m.

For many years, Japan has promoted PV through its "Sunshine" renewable energy programme to reduce the dependence on nuclear energy and on imported oil and gas. By 2000, it aims to stabilise carbon emissions at 1990 levels, a commitment also made by more than 150 developed nations, including the UK. Japan also says new energy sources will account for 2 per cent of its energy requirements by 2000, 3 per cent by 2010.

That compares with the European Commission's PV in 2010 study which calls for production of electricity from renewables to be trebled. It also concludes that roof and building-facade grid-connected applications represent the fastest-growing solar market in Europe.

Other market initiatives include rate-based incentives where individuals or businesses invest in PV, recouping their investment over 10 to 20 years via a premium rate for the electricity they feed into the national grid. The schemes are funded by a small surcharge on electricity bills.

Harford says such schemes work best in countries with a high degree of local autonomy, such as Germany and Switzerland, where utility companies may be owned by local authorities and are more

responsive to consumer preferences. He believes other mechanisms would be more appropriate for the UK.

Philip Wolfe, Intersolar's managing director, says the time is right to include PV in the UK's Non-Fossil Fuel Obligation, which subsidises electricity produced from renewable sources. Inclusion would expand the market, he says.

The DTI has so far excluded PV from the NFFO mechanism. The costs of PV-generated electricity have precluded this,@ Page says. The position will be reviewed after the next NFFO order, to be made in 1997.

However, John Battle, Labour's energy spokesman, says the party is committed to prising open NFFO and will include PV as part of its green energy policy.

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Assessing cy.Rev: A Commentary on Stalin's Opposition, Central Plans and Utopian Premises

By Louis Proyect

The Chicago area computer programmers and activists who decided to start a new journal called cy.Rev chose wisely to publish on the World Wide Web of the Internet. This is a great example of merging medium and the message after the fashion of Marshall McLuhan. The driving force behind this project is Carl Davidson, a leader of SDS in the 1960s and a writer and editor of the Guardian Newspaper during the 1970s. In recent years Davidson has done computer consulting for non-profit groups and unions in the Chicago area and believes passionately in the new technology.

Davidson and others organized themselves into the Chicago Third Wave Study Group which started cy.Rev in an effort to promote their ideas in "cyberspace". They dubbed themselves "Third Wave" because the futurists Alvin and Heidi Toffler were a strong influence on their vision of socialism. The Tofflers have been promoting the Third Wave theory like missionaries for years. Only since the arrival of personal computing and the Internet has "Third Wave" theory achieved the kind of high profile the Tofflers have sought for it over the years.

What exactly is the Third Wave? Put simply, the theory states that there are three important "waves" in social history: (1) rural societies based on agriculture, (2) urban societies that emerged with the industrial revolution, and (3) the information-based world in which we currently reside. The United States is in the throes of this third microchip-inspired wave. Most of its difficulties are the fault of its inability to migrate smoothly out of the "Second Wave" of dying smokestack industries into the promised land of computer networks and knowledge-based industries.

Newt Gingrich is a booster of the "Third Wave." So is Wired Magazine, a cosponsor of high-tech conferences with the Georgia reactionary. Davidson and the editors of cy.Rev want to cut the ties between "Third Wave" theory and its right-wing supporters and enlist in on behalf of a technologically supercharged version of market socialism. Not surprisingly, they blame the problems of traditional Marxism as having been too closely connected with "Second Wave" thinking. Such thinking gave birth to Stalinist bureaucracies where investments in heavy industry took priority over the technology of the information revolution.

There is a strong green emphasis in cy.Rev which argues that "Third Wave" socialism can also help to alleviate the environmental crisis. Both "Second Wave" capitalism and socialism have caused environmental degradation, despite the best intentions of governments east and west: "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 the 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 the 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."

Rejecting the development model of the former USSR, cy.Rev places itself squarely in the market socialism camp:
"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."

According to cy.Rev, the biggest obstacle to a smooth transition to "Third Wave" socialism in the United States is the stubborn tendency of jobs to disappear in capitalist society. They draw attention to studies such as Jeremy Rifkin's "The End of Work" and Stanley Aronowitz and William DiFazio's "The Jobless Future" which attempt to explain this problem. Both books take note of the replacement of blue-collar jobs through automation. Rifkin's solution is to create more jobs in the non-profit world of museums, schools and parks and the like. Davidson sympathies lie with the socialists Aronowitz and DiFazio (Aronowitz has recently joined the editorial board of cy.Rev). Reduction of work hours, regulation of capital to prevent capital flight, quality education with an accent on computer skills, a guaranteed income and a new research agenda geared to human needs rather than private profit are some of the solutions they propose in "The Jobless Future."

In addition to promoting this vision of "Third Wave" socialism, cy.Rev also includes useful articles that cover the proliferation of high-technology into the world of non-profits, unions, educational institutions and the progressive movement. One of the more interesting articles appears in the premier issue is "SoliNet: Electronic Conferencing for the Trade Union Movement" by Marc Belanger of the Canadian Union of Public Employees. SoliNet is a public computer conferencing system open to the labor movement and its allies with approximately 1500 users. According to Belanger, it probably the world's only such system owned and operated by a union.

Cy.Rev is a refreshing alternative to the "Neo-Luddism" of Kirkpatrick Sale or the anti-technology jeremiads of Neil Postman. Postman complains in "Technopoly" that, "In automating the operation of political, social and commercial enterprises, computers may or may not have made them more efficient but they have certainly diverted attention from the question whether or not such enterprises are necessary or how they might be improved. A university, a political party, a religious denomination, a judicial proceeding, even corporate board meetings are not improved by automating their operations.

They are made more imposing, more technical, perhaps more authoritative, but defects in their assumptions, ideas, and theories will remain untouched. Computer technology, in other words, has not yet come close to the printing press in its power to generate radical and substantive social, political, and religious thought. If the press was, as David Riesman called it, 'the gunpowder of the mind,' the computer, in its capacity to smooth over unsatisfactory institutions and ideas, is the talcum powder of the mind."

Anybody who has implemented computer systems for trade unions or liberation movements will find Postman's views one-sided and excessively pessimistic. If nothing else, cy.Rev's unbridled enthusiasm for computer technology is a much needed counter-balance to the gloom-and-doom warnings of a Sale or a Postman. Where cy.Rev errs, it is in the way it too closely identifies with the "information revolution" hype promoted relentlessly in Wired. One of the more glaring examples is the kid gloves treatment of Robert Reich in Carl Davidson's review of "The Work of Nations: Preparing for 21st Century Capitalism."

According to Davidson, "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 United States, 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." While Reich believes that a new generation of "symbolic analysts" will ease transition away from smokestack industries, Davidson warns that the biggest obstacle to this transition is the "savage inequalities" in our school system. He quotes approvingly Reich's desire to see "excellent public schools in every city and region and ample financial help to young people who wanted to attend college and substantial additional investments in universities, research parks, airports and other facilities conducive to symbolic-analytic work."

One of the most perceptive critics of "information revolution" hype is Doug Henwood, whose indispensable Left Business Observer covers the high-technology beat on a regular basis. Henwood is no neo-Luddite himself and maintains an electronic version of LBO on the World Wide Web while making his presence felt on numerous Internet mailing lists.

In his review of James Brook and Iain Boal's Resisting the Virtual Life, Henwood makes a number of keen observations about the "information revolution" hype and Robert Reich's role in it. Leaving aside the unlikely possibility that American capitalism is capable of improving its public schools to the level necessary to turn out "symbolic analysts," Henwood questions of the availability of such jobs in the future:

"Is there any truth to Reich's blather? How big is the high- tech, infobahn workforce now, and how big is it likely to get? The share of the workforce employed directly in information superhighway kinds of tasks is well under 2% -- and that includes people who design, make, and program computers, chips, and telecommunications equipment. Business purchases of computer and telecommunications equipment totals just over 2% of GDP. What the Bureau of Labor Statistics (BLS -- an agency within the department Reich now heads) calls scientists, engineers, and technicians now constitute about 5% of the total workforce. By 2005, it reckons, these workers will account for all of 5.6% of total employment. Looking at high-tech industries rather than workers gives an even less impressive picture; now they account for just over a quarter of total employment, but by 2005 their share is likely to fall by over a percentage point. The number of systems analysts and computer scientists will grow dramatically, yes -- by almost 80%. But since there are under a half-million of such folks now, their share of the workforce will remain nearly invisible to the naked eye. The same can be said of computer programmers, electronics engineers, and biotech scientists."

This leads us to another premise accepted uncritically by cy.Rev, the "disappearance of jobs." Is it the case that machines are replacing human labor to the extent that we face a totally redundant workforce beyond the 21st Century?

In his review of Jeremy Rifkin's "End of Work," Henwood observes that "People have been worrying about machines replacing human labor since the beginning of capitalism. Yes, machines do replace workers -- but employment nonetheless continues to expand, quadrupling in the U.S. over the last 60 years. In most parts of the world, aside from Europe and Africa, employment is growing. Throughout history, capitalism has constantly drawn new people into paid labor, though the demand for jobs always outstrips the system's capacity to provide them."

Clearly the task of mapping the future trajectory of capitalism in the 21st century will test the capacities of any professional "futurist", especially those of the Marxist persuasion. Immediately after WWII, the Marxist left in the United States anticipated economic depression and revolutionary upsurge. Instead we got the growth of suburbia, widespread availability of consumer goods and a quiescent working-class.

Certainly there are profound changes occurring in the American economy, but it would be a mistake to rule out the creation of many new industrial jobs. For example, the current generations of mostly middle-aged auto workers are getting ready to retire. Some experts in the auto industry predict wide-scale hiring over the next ten years. The critical question of course remains whether these will be well-paying union jobs or not.

Another problem with cy.Rev is that it seems to never consider the possibility that the progressive movement has alternatives to Sale's neo-Luddism or a brokered marriage between the Tofflers and Karl Marx.

To start with, there were alternatives to polluting heavy-industries in the USSR. What happened historically had little to do with Marxism's embrace of a "Second Wave" model, but instead had more to do with Stalin's go-for-broke rapid industrialization schemes. Stalin put through his wasteful and grandiose projects against the advice of the Soviet Union's most talented and pro-socialist engineers. Loren Graham's "Ghost of the Executed Engineer" is a penetrating study of the fate of one such engineer who stood up to Stalin.

Peter Palchinsky, a civil engineer, joined the Communist Party shortly after the 1917 revolution. Palchinsky supported the idea of planning. He believed that the Soviet Union opened up possibilities for industrial development that were impossible under Tsarism. He thought that engineers could play a major role in the growth of socialism.

Palchinsky argued against the type of gigantic enterprises that had captured Stalin's limited imagination. He noted that middle-sized and small enterprises often have advantages over large ones. For one thing, workers at smaller factories are usually able to grasp the final goals more easily.

He also believed that the single most important factor in engineering decisions was human beings themselves. Successful industrialization and high productivity were not possible without highly trained workers and adequate provision for their social and economic needs.

His differences with Stalin's pyramid-building approach erupted over the Great Dneiper Dam project, one of the most fabled 5-year plan projects. Palchinsky made the following critiques. The project did not take into account the huge distances between the dam and the targeted sites. As a consequence, there would be huge transmission costs and declines in efficiency.

Also, the project did not take into account the damage resulting floods would cause to surrounding farms situated in lowlands. Some 10,000 villagers had to flee their homes. As the project fell behind schedule and overran costs, the workers' needs were more and more neglected. The workers suffered under freezing conditions, living in cramped tents and barracks without adequate sanitary facilities. TB, typhus, and smallpox spread throughout the worker's quarters.

Palchinsky argued forcefully against projects such as these and offered a more rational, humane and less ideologically driven approach. In other words, he stressed sound engineering and planning methods. He helped to organize a study group dedicated to his principles. Palchinsky and other engineers who opposed Stalin's bureaucratic system allied themselves to some extent with Bukharin and Rykov who had often defended engineers and their approach to industrial planning. Stalin cracked down on the Bukharin opposition around the same time as he attacked dissident engineers and had Palchinsky imprisoned. The engineer died behind bars two years later.

Even if one argues that the Stalinist forced march was necessary for the survival of the USSR, we still should not close our eyes to alternative visions to Stalin's heavy-industry model. Newly industrializing nations like China need alternative models since they are facing the same issues that Soviet Russia faced when it undertook projects like the Great Dneiper Dam. Ambitious schemes to develop hydroelectric capacity in China are threatening the ecology of the region on a mammoth scale. There must be other options besides "Second Wave" pyramid-building schemes and "Third Wave" Silicon Valley daydreams. Chinese hospitals and schools need electricity before they have electronic networks, and the Palchinsky course is the most rational way to get there.

There are other efforts to reconcile computer technology and socialism that differ quite strikingly from cy.Rev's "Third Wave" vision. W. Paul Cockshott and Allin Cottrell co-authored "Towards a New Socialism: a Post-Soviet Model" to promote such a vision. Cockshott is a computer systems engineer and his expertise helps to give the book a firm grounding in the technology it espouses. They advocate centralized planning though the wide-scale use of networked computers, rather than the decentralized version of market socialism that cy.Rev embraces. Instead of rejecting a Soviet-type model out-of-hand, they present a re-engineered version.

Cockshott and Cottrell argue that the labor theory of value can provide the underpinning for both wages and prices in a socialist society. If we can quantify how long it costs to produce something, then we should not only be able price it accurately but make sure that factories can do it on time. This seems somewhat like the operating principle of the former Soviet Union, so why didn't it work there?.

The answer is two-fold. Besides the lack of democracy, there was also inadequate information available to economic planners. Only sophisticated computer systems can provide this information. They say, "If we want to get a more objective source of cost data, we need a system of data collection that is independent of the market. This is where computer technology comes in. We need a computerized information system that gives production engineers unbiased estimates of the labor time costs of different technologies."

The recent infatuation with market pricing in formerly socialist nations seems oddly placed, given the generally irrational nature of the market itself. Cockshott and Cottrell note that "market prices are used as a cost indicator in capitalist countries, but they have a certain arbitrary character. An artist dies in poverty. A few decades later his pictures change hands for millions. A sudden panic hits the stock markets. In a matter of hours hundreds of billions are wiped of stock prices. Farmers destroy crops because the prices are too low. Walk through the poor areas of a British or American city and you will see the pinched faces and stunted figures of people for whom food is too expensive."

If the proper computation of labor values is necessary for economic planning, what is better, according to Cockshott and Cottrell, to perform this function than modern supercomputers. Scientists use them for weather forecasting, atomic weapons design, oil prospecting and nuclear physics. Would it not be reasonable to expect a national planning bureau to make use of them as well?

They, like the publishers of cy.Rev, are cyber-optimists but welcome the idea of state management of the economy. They make the case succinctly for a mix of advanced automation and old-fashioned "state socialism":

"If detailed plan-balancing is way beyond the reach of the human brain, can the calculations be performed successfully using computers? Our answer will be `yes', but we wish to anticipate some criticisms. During the 1960s, as mainframe computers began to become widely available, many Soviet economic cyberneticians were very optimistic, but since that time the overall impact of the

computer on Soviet planning has disappointed those early expectations. Of course it was not just in the USSR that the benefits of computerization were greatly oversold in the 60s. Computerization is no panacea. There are many problems with the economic mechanism in the USSR which would have to be tackled before the application of extra computer-power can be expected to yield much of a dividend. (One example: the irrational and semi-fossilised pricing system, with the prices of many goods stuck at levels which guarantee shortages and queues.)

But having said that, the computer and telecommunications technology of the late twentieth century does present striking opportunities for the regulation of the economy. We believe that the more real danger at present is an over-reaction to the `failed promise of the computer'. One should remember that the USSR is somewhat behind the West in computer technology, and the types of computer system available to Soviet planners in the 60s and even 70s were primitive by today's Western standards. They were also very centralised (relatively few big mainframes), while the system we will propose makes use of both massive fast mainframes and widely-distributed PC-type equipment, linked by the national telecommunications system. And a political point is relevant here. Our planning proposals absolutely require a free flow of information and universal access to computer systems, and this was politically impossible in the USSR under Brezhnev. Even access to photocopying equipment was strictly controlled for fear of the dissemination of political dissent. While we are critical of the direction of some of the economic reforms currently underway in the Soviet Union, there is no doubt that the policy of glasnost is a precondition for the type of system we envisage."

As opposed to cy.Rev, the approach of Cockshott and Cottrell is much more consistent with the original vision of Marx. Marx embraced the technological advances that capitalism produced but sought to eliminate the private ownership of capital. In the aftermath of the collapse of the USSR, there has been a tendency to reject all aspects of Soviet society. The failure of the market to produce a higher standard of living in of the formerly socialist societies has begun to raise questions about the promise of capitalism itself.

The problem, however, with cy.Rev and Cockshott-Cottrell alike is that their vision of feasible socialisms rest on utopian foundations. They view computers as the key that can unlock the door to a more just and humane society. What they both fail to take into account is the historical agency that can abolish existing class relations in order to prepare the way for a computer-based socialism.

Market socialism and the dialectical opposite put forward by Cockshott-Cottrell view the failure of the former Soviet Union as a product of a deficient formula. It as if architects and engineers were doing a post-mortem on a collapsed structure. An inadequate design could cause a bridge to collapse, if for example wind stress factors were not taken into account. This is a bad way to understand the former Soviet Union however.

Socialist societies do not come into existence through blueprints. In every single case they are the products of explosive clashes provoked by war, economic dislocation, repression, and other profound shocks to the system. Furthermore, there is usually a huge gap between the development goals of revolutionaries once they take power and the technical and professional infrastructure required to implement them. When you combine this with the economic blockade or outright warfare imperialism tries to abort embryonic forms of socialism with, it is a miracle that any socialist society can move forward. Cuba remains the one society that seems dedicated to socialist goals even though capitalist pressure continues to extract compromises.

There was one other revolutionary society that for a brief period appeared to embody the economic and social justice goals of Cuban society while observing the need for democratic liberties. That society was Sandinista Nicaragua. The general direction of the Sandinista revolution was dictated by the exigencies of the class struggle nationally and internationally, however, and not by any blueprint. If anything, the difficulties faced by the Sandinistas dramatizes the futility of trying to build socialism on the basis of any pre-existing schema.

What inspired the Nicaraguan people to make a revolution was not some utopian plan but a sheer need for survival. Ravaged by the plagues of Somoza kleptocracy, earthquake and economic backwardness of a biblical dimension, they fought back for education, health care, jobs and end to repression. The Russian people likewise mobilized for "Bread, Peace and Land" without a clear idea of what would follow. So when the Sandinistas marched into Managua in 1979, they faced a situation similar to the one that Laurent Kabila faces today in the Congo. The masses have high expectations but a new government lacks a detailed plan how to fulfill them.

The forms of statehood that the Sandinistas adopted could only be related to the existing objective conditions. They nationalized all of Somoza's properties while leaving most other large and medium sized ranches in private hands. This "mixed economy" was a function not of an ideological commitment to market socialism but rather the recognition that the working class of Nicaragua was too weak to impose its will on the rest of society.

Management of state properties was a daunting task. The Nicaraguan state lacked experienced economists, statisticians, managers and clerks to coordinate the activities of state-owned banks, farms, mills and transportation. They did, however, make a commitment to using computer technology to make up for the short-fall of experienced professionals. For example, in the Central Bank an American volunteer working with an organization called Tecnica trained Nicaraguans to use Lotus 123 to convert foreign currency holdings into the Nicaraguan equivalent. A department of six college-educated Nicaraguans laboring with pencil and paper found that it could do the same work with just one person and a computer. In another dramatic example of the power of computer technology, an American volunteer from the same organization created a spare-parts database on a personal computer that major state owned and private manufacturing plants in Managua both took advantage of. This meant that breakdowns on an assembly line were repairable in a matter of hours rather than weeks.

American imperialism exhausted the Nicaraguan revolution and American volunteers eventually found themselves replaced by Somocista returnees from Miami eager to make a quick buck in "free" Nicaragua. One of the great tragedies of the defeat of the Nicaraguan revolution is that removes a shining example of what a feasible socialism might look like. This example was not created on the basis of a inspired plan. Instead it issued out of the struggle of ordinary human beings to make a better life for themselves against overwhelming odds and with both the tools and society they inherited. This will be true of any revolution in the future as well.

References:

The home page of cy. Rev is www.cyRev.net

The home page of LBO is www.panix.com/~dhenwood/LBO_home.html/

"Towards a New Socialism" (Nottingham, Spokesman, 1993) is available in an electronic, text-only version on the Communications for a Sustainable Future Gopher in Colorado under Economics-Authors.

Labor and Community Conferences Held This Summer

CyberActivists Are Getting Organized

By Jerry Harris

In June and July two conferences took place which reflect the growing movement of progressive cyberactivists. From June 13-15 the Community Technology Centers' Network (CTCNET) had their 6th annual meeting in Pittsburgh, PA. The next month in San Francisco, over the July 12-13 weekend, the 7th meeting of LaborTech was held, attended mainly by union organizers.

Both national conferences attracted participants whose political activity centers on using computers to organize a movement which empowers a working class and minority community social base. The issues of access, the spread of information as an essential element of democracy, and the fight for social and economic justice were on the agenda and in the discussions at both meetings

CTCNET originally grew out of Harlem's community computer center, Playing to Win, organized by Antonia Stone. CTCNET now has more than two hundred affiliated groups, mostly consisting of community based organizations and non-profit institutions. About 300 people attended the conference with a good proportion from African American and working-class communities.

CTCNET=s mission statement says that it “envisions a society in which all people are equitable empowered by technology”. Their special focus is bringing computers, media equipment and the skills to us them into low-income communities, thus enabling each community to voice their own social and political goals with greater impact.

The CTCNET activists came from all over the country to share experiences, discuss policy issues, and learn from each other. Workshops were divided into four areas: collaborations; program content; technology-centered workshops; and center development. Carl Davidson, cy.Rev managing editor, helped lead a workshop on recycling old computers. A lot of focus was on how to run effective centers, reaching people, developing meaningful programs, and building an expanded network of relationships with schools, libraries, city officials, and community organizers.

On the West Coast, the LaborTech Conference was mainly put together by a core of trade unionists who maintain LaborNet at the Institute for Global Communications. It attracted about 150 labor activists who use computer technology to organize unions, strikes, labor solidarity, and to expand internal union democracy

There were a number of exciting examples of labor organizing with the Internet. In England, LaborNet UK was key to helping striking dockers in Liverpool to spark global solidarity activities. The result was a one-day shutdown of 105 ports in Japan, Brazil, the U.S. West Coast, Europe, and other countries. Another example was given by Myoung Joon Kim from KCTU in South Korea. Activists there have developed global ties and given detailed news of the wave of general strikes which have swept their country. Workers from around the world have rallied to their support adding pressure on the government to make important concessions.

There were also plenty of fine U. S. examples. Ken Hamidi has organized a Web site for disgruntled Intel workers that has established contacts at every Intel corporate location, Those using the site have sponsored pickets, and are now organizing a cyberspace demonstration. Detroit Free Press strikers explained how they established a net page when union leadership was slow to act, prompting an

official page to be posted. Meanwhile they maintained their page as a direct and militant voice for striking members.

While the AFL-CIO and numerous unions have put up web sites, many at the conference pointed out that these are mainly a one-way means of communication, from the officials to the membership. It was the general consensus that the net was best used as a two-way, many-to-many means on communication, to listen to and connect the rank and file as a way of expanding union democracy. While most union members still have no access at home, large numbers have access at work. Downloaded copies of union-related information often find their way to the job. It was also pointed out that unions need to fight for access to corporate internal networks, just as they have access to company bulletin boards.

One Detroit striker said he had recently read Lenin's “What Is To Be Done”, and compared the idea of establishing the All-Russian paper Iskra as the scaffolding of the Soviet revolution, to using the net today as the scaffolding of a new movement linking activists together.

Many workshops focused on globalization as a process which has deeply effected labor, its' ability to bargain and fight. Most participants felt workers now are facing multinational corporations and must build an international movement as part of any national struggle.

Attention was also focused on the workplace and how computers have changed industrial, service and professional jobs. The idea that we have passed from an industrial to an information economy was an idea many agreed with. The real question being discussed was how to build an effective labor movement in face of these changes.

Both of these conferences show that cyberactivists are well on their way to using the new technologies to organize, educate, and build a new movement. Participants not only understood how to use computers, but the key issues, politics and analysis necessary to put progressives squarely in the coming battles for social justice.

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Book Review:

Karl Sveiby's 'The New Organizational Wealth'

By Jerry Harris
Chicago Third Wave Study Group

Karl Sveiby's The New Organizational Wealth joins a small but growing number of books devoted to understanding the new knowledge economy and how corporations need to find new ways to measure value. As information technologies becomes key in the creation of wealth, the task of understanding the value knowledge produces begins to assume ever greater importance to economic theory.

A case in point was a recent Chicago Tribune front page story under the headline, "The Unlikely Economy." With unemployment down, consumer confidence up, and an ongoing expansion, prices have dropped instead of going up. While most traditional economists were baffled, one theorist argued that investment in computers and labor-saving technology had pushed production beyond what the government could measure using the antiquated tools which only count industrial output. It's no longer simply giant physical assets which form the foundation of value in the economy. The difference between a corporation's net book value and its market value also reflects its intangible assets or "good will," which now usually exceeds physical assets. For example, General Motors with all its plants and equipment is valued at half of Microsoft with their single "campus" filled with nothing but desks and computers.

Sveiby divides these intangible assets into three parts: employee competence; internal structures such as patents, concepts. and computer systems; and external structures like customer relationships and public image. Knowledge corporations whose value is based in these types of assets do not face diminishing returns because, unlike limits on physical resources, ideas are infinite.

Sveiby bases knowledge within the social context of human interaction so that learning is a continual process which gives people the capacity to act. Therefore when he talks of worker competence, his definition embraces factual knowledge, skill, experience, value judgment and social networks. Knowledge is not something that can simply be programmed into software and used by anyone. Rather knowledge is deeply embedded in each individual, reflects their experience, and ability to communicate and act. Value thus resides in the worker and not the technology.

The author makes a sharp distinction between information and knowledge; in fact he states that "information is meaningless and of low value." His advice to managers is to treat information as a "glut product with little or no economic value." It's knowledge that makes sense of information, and the best way to impart knowledge is the traditional method of personal transfer. While information in technological systems contain knowledge, competence comes from the learning process under the guidance of a teacher, as in the master/apprentice relationship.

In the second part of the book the author tackles the question of how to manage intangible assets. His first observation is the power conflict between organizational managers and knowledge workers. Knowledge professionals need the freedom to create and are the workers most responsible for producing revenue. On the other hand managers police the organization and tend to value routine. This produces two power centers with resulting struggles over policy and direction. Sveiby's advice is to see and treat professionals as revenue centers, not as labor costs. They should be given the same

or even better pay than their managers, and have access to the same information. When experts become senior workers and are past their peak revenue producing activity they should be used as teachers for younger experts.

For Sveiby support staff are low in professional and organizational competence, tend to develop "underdog symptoms," and make narrow demands around working conditions, But most anyone who has worked in an office knows that support staff actually have great organizational competence, and in fact often know more about the daily operation than managers. If given the chance, support staff can also have important insight into professional areas because of knowledge based in life-long experience.

A Case in Point

One business that might surprise Sveiby was the Community Law Collective in San Francisco which included support staff in all firm discussions over policy, community relations, and business decisions. For sisteen years this collective was one of the most successful models to develop out of the critical law movement of the 1 960s. The two Chicana legal secretaries became full partners of the collective and were paid equally with the lawyers. Because these women were from the community in which the law collective worked, they helped to bring in cases which expanded the client base, and played an important role in maintaining relations with a wide set of neighborhood contacts. As collective lawyer Paul Harris explained they increased the "good will" and reputation of the office. They also taught the lawyers about the community and how best to relate to clients. These examples are exactly what Sveiby means by knowledge value.

The secretaries also exerted real influence in policy debates. One of the most important was whether or not to represent drug dealers who were offering a lot of money for legal services. Some of the lawyers argued forcefully to take these cases. But the typists opposed this position because it would harm the reputation and good will the collective held in the community. The secretaries won the debate and thereby helped guarantee the long term success of the business.

Like many other corporate consultants, Sveiby is big on outsourcing, particularly of low-status jobs such as watchmen, cleaners and gatekeepers. He argues at outsourced firms these workers become "security executives and hygiene specialists whose experience and skills are vital assets. They become aware of a hunger they never felt when employed by large firms to perfect and develop their skills . This change in perspective affects strategy in a profound way. When knowledge of cleaning is the core business, the skill of cleaners become a strategic core competence." (p. 103) I think Sveiby needs to clean a few toilets and carry out his own garbage for a week. This fantasy of turning low paid and insecure workers into what the author now calls "independent professionals" is the worst type of corporate hype. One of the areas of greatest ignorance for knowledge consultants is their lack of understanding of working class reality One must wonder if this isn't all just corporate propaganda to cover low-wage profit strategies, or simply an area where the author lacks "competence."

Sveiby is on firmer ground when he returns to the relationship of information to knowledge, and the role they can play in a company. He estimates that the supply of information has grown tenfold over the last ten years which has caused an excess of supply over demand. As Sveiby explains, "it takes time, experience, and mental effort to turn information into useful knowledge. Information that turns out to be worthless is really worth less than nothing." (p. 111) Financial markets are the most information intensive where speed plays a key role. Yet adding more information obscures and slow things down and therefore can play a negative role.

Mass vs. Custom

Many corporations have reacted to the informatization of markets in a typical second wave fashion. The more information the better, as if mass market strategies can be adapted to the knowledge economy. This leads to a strategy of offering a low degree of customization, aiming at mass sales, and regarding people as costs. Managers usually promote this industrial age strategy, particularly because it increases control and lowers costs by substituting information technology for labor. This widespread use of information technology inside an industrial pattern may explain the lack of big gains in productivity because managers can not visualize the proper use of the new productive tools.

As Sveiby explains: "Information technology can be used to standardize or to customize. It can be used to increase control over people or to decrease it. It can be use to control very large bureaucracies or empower very large networks. It can be a powerful servant of an industrial strategy, an information-focused strategy, or a powerful enabler of knowledge-focused strategy. The choice is made not by the technology but by those in power." (p. 137) Knowledge based strategy develops a high degree of customization, which sells knowledge as a relationship and process. It looks to the "potential of professionals to increase revenue rather than on the ability of managers to reduce costs. (p. 138) The strategy is hard to copy because it is based in specialized knowledge and therefore very competitive.
And as Sveiby shows in the last part of his book this strategy is quantifiable, predictable, and controllable.

The three major indicators used to measure intangible assets are growth and renewal, efficiency, and stability. Each of these is analyzed in terms of the companies' external and internal structures, and the competency of its workers. The areas used to measure the growth of worker competency are the average number of years that professionals have in their field, education levels, and how many customers demand the development of new knowledge skills. Under efficiency the value added per expert and the value added per employee is measured. Stability means tracing expert turnover and seniority years—particularly compared to new hired experts. In all these areas Sveiby is looking for ratios and sets of balances that are correlated with good profits rates.

Only professional staff are grouped under competency. Support staff are measured as part of the internal structure along with investments in R&D and information technology as percents of value added activity. External structure looks at the time employees spend building, and developing customer relations. And customers are measured not only by profitability, but image enhancement, references, and if the relationship spurs the company to learn new skills.

These and other measurements are used to monitor each area of intangible assets and direct the company on investment and organizational decisions. Sveiby is not just spinning abstract theories. His ideas have been put to successful use in a number of corporations. Two Swedish firms, WM-data and Skandia AFS are leaders in this field. For those of you tired of reading futurists predicting how technology will change our world, here is a book hard at work developing the economic theory that can measure the real changes taking place.

Lastly, one insight that struck me while reading this book is how much political groups are knowledge organizations. Many of Sveiby's ideas are directly applicable to political parties. Your best organizers or cadre are your knowledge professionals, always demanding the freedom to create and adopt tactics while the administrative apparatus is often concerned with routine and control. The "good will" a political party maintains with its base is key to its success. There needs to be a good ratio between senior organizers and new blood, with older cadre acting as teachers. New mass

campaigns extend the knowledge base of the group and forces itto learn new skills. and the list goes on. So reading Sveiby is valuable from a number angles. The book runs 202 pages including graphs, well-designed charts and chapter summaries.