

# Industrial Policy: New Wine in Old Bottles

## I. The Unsustainability of the Existing System

Einstein reputedly said that you can't solve problems with the same level of thinking that caused them in the first place. The political and economic establishments tasked to deal with problems, unfortunately, do so by intensifying the very forces that led to the crisis; as Ivan Illich put it, they "attempt to solve a crisis by escalation."<sup>1</sup> They do so because the current problems are a byproduct of the pursuit of institutional self-interest by the people who direct this society. So any "responsible" and "moderate" solution will, by definition, be one that can be implemented through the institutions those people run, without any fundamental structural changes; and any solution that directly addresses the structural causes of the problem will, by definition, be "extremist." Sociologist C. Wright Mills' memorable term for that mindset was "crackpot realism."

The crackpot realists have been busy lately, feverishly promoting bailouts to preserve the "industrial infrastructure." Their vision of how to restore "the economy," naturally, amounts to a return to an economic "normalcy" defined by giant corporations and mass consumer society.

The problem is, the present model of industrial production is about as sustainable as the *Titanic*. It came into existence only through government policies to subsidize the operating costs and inefficiencies of big business, and a regulatory framework (including "intellectual property") to protect it from competition. And that industrial model is hitting a wall, a systemic crisis, in which government will no longer have the resources to subsidize inputs at the level at which they are demanded.

The present industrial model, identified with GM's Alfred Sloan and celebrated by Alfred Chandler, is based on enormous market areas and costly, product-specific machinery. The only way to keep the unit costs of such machinery down is large-batch production to utilize full capacity, and then worrying about making people buy it only afterward (commonly known as "supply-push distribution."<sup>2</sup> So Sloanist industry, under "Generally Accepted Accounting Principles," produces goods to sell to inventory, regardless of whether there are orders for it or even of whether the product works, and has an astronomical recall rate.<sup>3</sup> It follows a business model based on consumer credit and planned obsolescence to keep the wheels running. As Ralph Borsodi described it, the push distribution system required by Sloan-style mass production amounted to making water run uphill.<sup>4</sup> The overall logic of the system is that instilled by hypnopaedic suggestion in *Brave New World*: "Ending is better than mending." "The more stitches, the less riches."

The state capitalist system has been plagued by chronic crises of overaccumulation and underconsumption since the crisis of the 1890s.<sup>5</sup> These crises were the main force

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1 Ivan Illich, *Tools for Conviviality* (New York, Evanston, San Francisco, London: Harper & Row, 1973), p. 9.

2 The contrast between the Sloanist mass production model and the Emilia-Romagna model discussed below is the subject of Michael J. Piore and Charles F. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (New York: HarperCollins, 1984).

3 William H. Waddell and Norman Bodek. *Rebirth of American Industry: A Study of Lean Management* (Vancouver, WA: PCS Press, 2005).

4 Ralph Borsodi, *The Distribution Age* (New York and London: D. Appleton and Company, 1929), p. 110.

5 Although many libertarians reject overproduction as inconsistent with Say's Law, Say's Law is totally

behind the growth of big government in the 20th century. The U.S. government pursued a policy of what William Appleman Williams called "Open Door Imperialism,"<sup>1</sup> forcibly opening markets to provide American industry with an outlet for excess goods and capital. Domestically, government resorted to Keynesian policies of aggregate demand management and redistribution of purchasing power, in order to mitigate the problem of underconsumption. Government also directly purchased the corporate economy's surplus output, as described by Paul Baran and Paul Sweezy.<sup>2</sup>

When these tendencies culminated in the Depression of the 1930s, American state capitalism was saved from its systemic crises only because the great powers blew up most of the industrial capital outside the U.S. The war also nationalized around half of U.S. productive capacity and created a permanent war economy that has helped to absorb surplus output ever since. In the postwar period, the U.S. government found new ways to absorb surplus capital and output: among them the government-financed building of the Interstate Highway System, the mass suburbanization associated with it, and the creation of entire new industries. The latter industries, created almost entirely through government-funded R&D during and after WWII, and/or whose existence was possible only through the action of government in guaranteeing a market for their product, included civilian jumbo jets, microelectronics, cybernetics, and the use of automated control systems for machine tools.<sup>3</sup>

The cumulative effect of these policies postponed the day of reckoning and earned "consensus capitalism" a generation or so of extra life, until around 1970 or so when the rest of the world had rebuilt its plant and equipment. Since then neoliberalism, globalization, the creation of the tech sector, the housing bubble and intensified suburbanization, and the expansion of the FIRE economy (finance, insurance and real estate) have served as successive expedients to soak up surplus capital.<sup>4</sup>

It was after the collapse of the tech bubble that derivatives and securitization of debt really came into their own as surplus capital sponges. As Joshua Holland noted, in most recessions the financial sector contracted along with the rest of the economy; but after the

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irrelevant to a system that's statist to its core. Overproduction is inherent in state capitalism, by its very logic. The state promotes excessive capital accumulation while simultaneously promoting the formation of cartels, leading to industry which cannot run at full capacity and dispose of its full product at cartel prices. A good general discussion of these issues can be found in Joseph Stromberg, "The Role of State Monopoly Capitalism in the American Empire" *Journal of Libertarian Studies* Volume 15, no. 3 (Summer 2001) <[http://www.mises.org/journals/jls/15\\_3/15\\_3\\_3.pdf](http://www.mises.org/journals/jls/15_3/15_3_3.pdf)>.

1 William Appleman Williams, *The Contours of American History* (Cleveland and New York: The World Publishing Company, 1961).

2 Paul Baran and Paul Sweezy, *Monopoly Capitalism: An Essay in the American Economic and Social Order* (New York: Monthly Review Press, 1966).

3 David F. Noble. *America by Design: Science, Technology, and the Rise of Corporate Capitalism* (New York: Alfred A. Knopf, 1977); Noble, *Forces of Production: A Social History of Industrial Automation* (New York: Alfred A. Knopf, 1984); Charles E. Nathanson, "The Militarization of the American Economy," in David Horowitz, ed., *Corporations and the Cold War* (New York and London: Monthly Review Press, 1969); Frank Kofsky, *Harry S. Truman and the War Scare of 1948* (New York: St. Martin's Press, 1993).

4 Walden Bello, "A Primer on Wall Street Meltdown," *MR Zine*, October 3, 2008 <<http://mrzine.monthlyreview.org/bello031008.html>>.

2000 tech bust it just kept growing, ballooning up to ten percent of the economy.<sup>1</sup> We can see now how that worked out.

The problem is, there was barely enough demand to keep the wheels running and absorb the full product of overbuilt Sloanist industry even when everyone maxed out their credit cards and tapped into their home equity to replace everything they owned every five years. And we'll never see that kind of demand again. So there's no getting around the fact that a major portion of existing plant and equipment will be rust in a few years.

The crisis goes beyond the traditional problems of underconsumption and excess capacity that caused previous recessions, even in greatly intensified form. In the past, the state compensated for the falling rate of profit by subsidizing the inputs of big business and creating an artificial market for its surplus output. The corporate economy grew at least as much from extensive addition of inputs as from increased efficiency in its use of existing ones. And it directed a great deal of its productive capacity to selling goods to the state, for which there was no market demand.

But now, in addition to the crises of overaccumulation and underconsumption, the state is facing a crisis of inputs which limits its capacity to absorb costs in this manner. It's a basic rule of economics that when you subsidize something, demand increases. The subsidized consumption of energy and transportation inputs led, as subsidies always do, to the exponential growth of demand, until the corporate economy's demand for energy and transportation inputs has outstripped the state's ability to subsidize them. And the state's ability to increase energy inputs, in particular, has hit the wall of Peak Oil.<sup>2</sup>

## II. The Seeds of the New System

Sloanism, not to mince words, is as dead as Elvis; the corpse just hasn't started to stink yet. The kind of industry that emerges on the other side of the Time of Troubles will be the opposite of Sloanism.<sup>3</sup> It will be an economy of small-scale manufacturing

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1 Joshua Holland, "Let the Banks Fail: Why a Few of the Financial Giants Should Crash," *Alternet*, December 15, 2008 <[http://www.alternet.org/workplace/112166/let\\_the\\_banks\\_fail%3A\\_why\\_a\\_few\\_of\\_the\\_financial\\_giants\\_should\\_crash\\_/>](http://www.alternet.org/workplace/112166/let_the_banks_fail%3A_why_a_few_of_the_financial_giants_should_crash_/>).

2 Although oil prices are at historic lows at the time of this writing, this is fully consistent with the Peak Oil thesis. Peak Oil simply states that oil extraction has peaked or is about to do so. Since we're pumping as much oil out of the ground as we ever will, and the rate of extraction will slowly and steadily decline, supply cannot increase in response to price. So price is determined entirely by fluctuations in demand--a phenomenon that our Georgist friends are familiar with in real estate. When demand rises to previous levels, price will spike even higher. And while prices may be extremely volatile, the spikes will become progressively higher over time. When oil spiked at \$130/barrel last summer, the airlines were on the verge of shutting down a fifth of their routes and some truckers talked about simply abandoning their rigs on the shoulder and walking away. When fuel is over \$12/gallon, as it likely will be in a few more years, air freight and trucking will likely be a thing of the past, and the limited capacity of railroads will be limited mainly to value-dense cargos that can't be produced locally. Anything that can be produced locally, will be.

3 Assuming, of course, that government doesn't resort to its *other* corporatist weapon against overproduction: the approach embodied in the New Deal's National Industrial Recovery Act. That

for local markets.

The closest existing model for sustainable manufacturing is Emilia-Romagna. In that region of 4.2 million people, the most prosperous in Italy, manufacturing centers on "flexible manufacturing networks" of small-scale firms, rather than enormous factories or vertically integrated corporations. Small-scale, general-purpose machinery is integrated into craft production, and frequently switches between different product lines. It follows a lean production model geared to demand, with production taking place only to fill orders, so there's no significant inventory cost. Supply chains are mostly local, as is the market. The local economy is not prone to the same boom-bust cycle which results from overproduction to keep unit costs down, without regard to demand. Although a significant share of Emilia-Romagna's output goes to the export market, its industry would suffer far less dislocation from a collapse of the global economy than its counterparts in the United States; given the small scale of production and the short local supply chains, a shift to production primarily for local needs would be relatively uncomplicated. The region's average wage is about double that of Italy for a whole, and some 45% of its GDP comes from cooperatively owned enterprises.<sup>1</sup>

Emilia-Romagna's production model is a fulfillment of the potential of electrically powered machinery. The decentralizing potential of small-scale, electrically powered machinery was a central theme of Kropotkin's *Fields, Factories and Workshops*. With electricity "distributed in the houses for bringing into motion small motors of from one-quarter to twelve horse-power," workers were able to leave the small workshops to work in their houses.<sup>2</sup> More important, by freeing machinery up from a single prime mover, it ended all limits on where the small workshops themselves could be located. The primary basis for economy of scale, as it existed in the nineteenth century, was the need to economize on horsepower--a justification that vanished when the distribution of electrical power eliminated reliance on a single source of power.

Ralph Borsodi, writing in the 1920s and 1930s, argued that the overall cost of manufacturing most light goods like food, textiles, and furniture in one's home was actually lower than in the factory. The reason was that the electric motor put small-scale

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approach would involve restricting price competition between the firms in each industry and allowing the major players to collude in setting prices and output levels. The idea would be to enable all the firms in an industry to operate with the same levels of idle capacity indefinitely, to set prices based on cost-plus markup, and pass the enormously increased overhead costs to the consumer through administered pricing. If you want to see that kind of economy in action, just rent a DVD of *Brazil*.

1 Robert Williams, "Bologna and Emilia Romagna: A Model of Economic Democracy," paper presented to the annual meeting of the Canadian Economics Association, University of Calgary. May/June 2002, pp. 8-9, 24 <<http://www.bcca.coop/pdfs/BolognaandEmilia.pdf>>; Sebastian Brusco, "Emilian Model: Productive Decentralization and Social Integration," *Cambridge Journal of Economics*, 1982, 6, pages 167-184, in *Ibid.*, p. 10; Bruce Herman, "Industrial Development: Targeting New and Basic Industries," National Council for Urban Economic Development, October 1988, in *Ibid.*, p. 12. Michael J. Piore and Charles F. Sabel, in *The Second Industrial Divide: Possibilities for Prosperity*, propose the Emilia-Romagna mechanized craft model as a remedy for the economic pathologies of Sloanism (New York: HarperCollins, 1984).

2 Peter Kropotkin, *Fields, Factories and Workshops: or Industry Combined with Agriculture and Brain Work with Manual Work* (New York: Greenwood Press, Publishers, 1968 [1898]), p. 154.

production machinery in the home on the same footing as large machinery in the factory. Although economies of large-scale machine production exist, most of the economies of machine production are captured with the bare adoption of the machinery itself, even on a household scale. After that, the downward production cost curve is rather shallow, while the upward distribution cost curve is steep.

Borsodi started with an assessment of the comparative cost of growing and canning tomatoes at home versus buying canned tomatoes from the grocer, and found that when all costs were accounted for (including canning supplies, electricity, labor, amortization on the kitchen range, etc.) the home product was actually a third cheaper than store-bought. The reason? The home product, produced at the point of consumption, had zero distribution cost. The modest additional unit cost savings from large-scale machinery were insufficient to offset the enormous cost of distribution and marketing.<sup>1</sup>

He went on to experiment with home clothing production with loom and sewing machine, and building furniture in the home workshop.

I discovered that more than two-thirds of the things which the average family now buys could be produced more economically at home than they could be bought factory made;

--that the average man and woman could earn more by producing at home than by working for money in an office or factory and that, therefore, the less time they spent working away from home and the more time they spent working at home, the better off they would be;

--finally, that the home itself was still capable of being made into a productive and creative institution and that an investment in a homestead equipped with efficient domestic machinery would yield larger returns per dollar of investment than investments in insurance, in mortgages, in stocks and bonds....

These discoveries led to our experimenting year after year with domestic appliances and machines. We began to experiment with the problem of bringing back into the home, and thus under our own direct control, the various machines which the textile-mill, the cannery and packing house, the flour-mill, the clothing and garment factory, had taken over from the home during the past two hundred years....

In the main the economies of factory production, which are so obvious and which have led economists so far astray, consist of three things: (1) quantity buying of materials and supplies; (2) the division of labor with each worker in industry confined to the performance of a single operation; and (3) the use of power to eliminate labor and permit the operation of automatic machinery. Of these, the use of power is unquestionably the most important. Today, however, power is something which the home can use to reduce costs of production just as well as can the factory. The situation which prevailed in the days when water power and steam-engines furnished the only forms of power is at an end. As long as the only available form of power was *centralized* power, the transfer of machinery and production from the home and the individual, to the factory and the group, was inevitable. But with the development of the gas-engine and the electric motor, power became available in

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<sup>1</sup> Ralph Borsodi, *Flight From the City: An Experiment in Creative Living on the Land* (New York, Evanston, San Francisco, London: Harper & Row, 1933, 1972), pp. 10-15.

*decentralized* forms. The home, so far as power was concerned, had been put in position to compete with the factory.

With this advantage of the factory nullified, its other advantages are in themselves insufficient to offset the burden of distribution costs on most products....

The average factory, no doubt, does produce food and clothing cheaper than we produce them even with our power-driven machinery on the Borsodi homestead. But factory costs, because of the problem of distribution, are only first costs. They cannot, therefore, be compared with home costs, which are final costs. The final cost of factory products, after distribution costs have been added, make the great bulk of consumer goods actually more expensive than home-made products of the same quality.<sup>1</sup>

Paul Goodman remarked on the change from the time when "the sewing machine was the only widely distributed productive machine..., but now... the idea of thousands of small machine shops, powered by electricity, has become familiar; and small power-tools are a best-selling commodity."<sup>2</sup>

Production with small-scale, free-standing, electrically powered machinery was the defining feature of what Lewis Mumford called the neotechnic era, which in his periodization of technological history followed the paleotechnic era of steam, coal and Dark Satanic Mills.

The fulfillment of this potential, unfortunately, has been delayed. Mumford argued that the neotechnic technologies developed from the late nineteenth century on, based on the decentralizing potential of small-scale electrically powered machinery, have not been used to their full potential as the building blocks of a fundamentally new kind of economy; they have, rather, been incorporated into the preexisting paleotechnic framework. Neotechnic had not "displaced the older regime" with "speed and decisiveness," and had not yet "developed its own form and organization." He explained the phenomenon with reference to Spengler's idea of the "cultural pseudomorph" (a fancy version of path dependency):

...in geology... a rock may retain its structure after certain elements have been leached out of it and been replaced by an entirely different kind of material. Since the apparent structure of the old rock remains, the new product is called a pseudomorph. A similar metamorphosis is possible in culture: new forces, activities, institutions, instead of crystallizing independently into their own appropriate forms, may creep into the structure of an existing civilization.... As a civilization, we have not yet entered the neotechnic phase.... [W]e are still living, in Matthew Arnold's words, between two worlds, one dead, the other powerless to be born.<sup>3</sup>

...Emerging from the paleotechnic order, the neotechnic institutions have nevertheless in many cases compromised with it, given way before it, lost their identity by reason of the weight of vested interests that continued to support the obsolete instruments and the anti-

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1 Ibid., pp. 17-19.

2 Paul and Percival Goodman, *Communitas: Means of Livelihood and Ways of Life* (New York: Vintage Books, 1947, 1960), p. 156.

3 Lewis Mumford. *Technics and Civilization* (New York: Harcourt, Brace, and Company, 1934), p. 265.

social aims of the middle industrial era. *Paleotechnic ideals still largely dominate the industry and the politics of the Western World....* To the extent that neotechnic industry has failed to transform the coal-and-iron complex, to the extent that it has failed to secure an adequate foundation for its humaner technology in the community as a whole, to the extent that it has lent its heightened powers to the miner, the financier, the militarist, the possibilities of disruption and chaos have increased.<sup>1</sup>

The new machines followed, not their own pattern, but the pattern laid down by previous economic and technical structures.<sup>2</sup>

We have merely used our new machines and energies to further processes which were begun under the auspices of capitalist and military enterprise: we have not yet utilized them to conquer these forms of enterprise and subdue them to more vital and humane purposes....

Not alone have the older forms of technics served to constrain the development of the neotechnic economy: but the new inventions and devices have been frequently used to maintain, renew, stabilize the structure of the old social order...<sup>3</sup>

The present pseudomorph is, socially and technically, third-rate. It has only a fraction of the efficiency that the neotechnic civilization as a whole may possess, provided it finally produces its own institutional forms and controls and directions and patterns. At present, instead of finding these forms, we have applied our skill and invention in such a manner as to give a fresh lease of life to many of the obsolete capitalist and militarist institutions of the older period. Paleotechnic purposes with neotechnic means: that is the most obvious characteristic of the present order.<sup>4</sup>

But the cultural pseudomorph is unsustainable and riddled with contradictions, in ways that Mumford did not anticipate in the pessimism of his later years. In the earlier stage of the cultural pseudomorph that Mumford remarked on, neotechnic methods were integrated into a mass-production framework fundamentally opposed to the technology's real potential. Rather than integrating electrically powered machinery into craft production, despite the chief rationale for the large factory being gone, Sloanist production instead integrated the new machinery into the Dark Satanic Mill. As Waddell and Bodek observed, the layout of the machinery in a Sloanist factory followed the same exact pattern as if it all had to be hooked to belts running off the drive shaft from a central steam engine or water-wheel.

But since Mumford wrote, the cultural pseudomorph has entered a second, far weaker phase. Starting with the lean revolution in Japan and spreading to the U.S. from the 1970s on, mass production on the Taylor-Sloan model is being replaced by flexible, networked production with general-purpose machinery, with the production process organized along lines much closer to the neotechnic ideal. But the neotechnic, even though it has finally begun to emerge as the basis of a new, coherent production model governed by its own laws, is still distorted by the pseudomorph in a weaker form: the

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1 Ibid., pp. 212-13.

2 Ibid., p. 236.

3 Ibid., p. 266.

4 Ibid. p. 267.

persistence of the corporate framework of marketing, finance and "intellectual property."

But the corporate framework is itself unsustainable. The proliferation of even more productive small-scale machinery, like desktop digitally-controlled machine tools, combined with the unenforceability of "intellectual property" law in the digital age, and combined as well with new ways for ordinary people to pool dispersed capital, are leading to a singularity that will tear down the corporate walls. The separate terminal crises of corporate capitalism are reinforcing each other to create a perfect storm: the corporate economy's need for subsidized inputs continues to grow exponentially, even as the collapse of the rents on intellectual property causes the base of taxable value to implode.

So long as the state successfully manages to prop up the centralized corporate economic order, libertarian and decentralist technologies and organizational forms will be incorporated into the old corporate framework. As the system approaches its limits of sustainability, those elements become increasingly destabilizing forces within the present system, and prefigure the successor system. When the system finally reaches that limit, those elements will (to paraphrase Marx) break out of their state capitalist integument and become the building blocks of a fundamentally different free market society.

The unsustainability of the old corporate framework is most apparent in the culture industries. The copyright-centered business model of the old corporate dinosaurs simply cannot survive in an environment where the basic capital equipment for recording and sound editing, podcasting, software design, and desktop publishing are affordable on an individual basis, and in which bittorrent and strong encryption make copyright obsolete. The old gatekeeper corporations originally owed their power to the enormous capital outlays required to start a newspaper, a radio station or a record studio, with twentieth century technology--often amounting, at a minimum, to hundreds of thousands of dollars. The main function of the traditional corporate firm was to govern the tangible assets, hire labor to work them, and supervise the labor to make sure it was acting in the interests of the corporation. Today, in contrast, the basic item of capital equipment for desktop publishing, sound editing or podcasting is the personal computer, which is in more than half the homes in the country. The networked environment, combined with endless varieties of cheap software for creating and editing content, makes it possible for the amateur to produce output of a quality once associated with giant publishing houses and recording companies. In this environment, the only thing standing between the old information and media dinosaurs and their total collapse is their so-called "intellectual property" rights--which, once again, are becoming unenforceable.

In the information and culture industries, where the basic production equipment is affordable to all, and bottom-up networking renders management obsolete, it is likely that self-managed, cooperative production will replace the old managerial hierarchies. Music, publishing and software will be governed by peer production on the Linux model. But how is it possible to realize value from open-source production with zero cost of reproduction? The answer is suggested by the business models of Red Hat, Phish and Radiohead. Red Hat, a Linux distributor, can't make money from ownership rights over



the software itself. But it does quite well selling customer support and product customization. Phish gives the basic product, its music, away free; it makes money from concert tickets and concessions. Radiohead experimented with offering an album for free download from its website, coupled with the collection of voluntary contributions via what amounted to a glorified PayPal tip jar.

The interesting thing about Radiohead's business model is that, because there is no physical reproduction process (the downloader burns his own CD), the overhead cost (mainly hosting and administering the website) is close to zero when spread over all the downloads. So even if the downloaders only average a buck or two per person, or even less, the revenue is essentially free and clear. Apologists for copyright like to say "you can't compete with free." Actually, though, there is still a significant rent entailed in the time and trouble of entering the market, even when there are no proprietary rights to the content. For the largest bestselling authors, like Stephen King, it may be worth it to offer his content at a unit price of fifty cents over production cost, even when King is selling his books for only a dollar over cost. But for the vast majority of writers and musical artists with small to medium-sized market profiles, so long as they sell their product for a modest markup over production cost, the profit to be gained by undercutting them by such a small amount simply isn't worth the trouble. It's only those who charge a large markup who would make it worth the competitor's while to undercut them.

As for manufacturing, the new economy that emerges from the Time of Troubles, if anything, will be more Emilia-Romagna than Emilia-Romagna itself. Product design will be revolutionized around modular components, for durability and cheap reparability.

Julian Sanchez's discussion of the i-Phone is a good example of the effect of proprietary technology in reinforcing planned obsolescence.

(1) Some minor physical problem afflicts my portable device—the kind of thing that just happens sooner or later when you're carting around something meant to be used on the go. In this case, the top button on my iPhone had gotten jammed in, rendering it nonfunctional and making the phone refuse to boot normally unless plugged in.

(2) I make a *pro forma* trip to the putative "Genius Bar" at an Apple Store out in Virginia. Naturally, they inform me that since this doesn't appear to be the result of an internal defect, it's not covered. But they'll be only too happy to service/replace it for something like \$250, at which price I might as well just buy a new one....

(3) I ask the guy if he has any tips if I'm going to do it myself—any advice on opening it, that sort of thing. He's got no idea....

(4) Pulling out a couple of tiny screwdrivers, I start in on the satanic puzzlebox casing Apple locks around all its hardware. I futz with it for at least 15 minutes before cracking the top enough to get at the inner works.

(5) Once this is done, it takes approximately five seconds to execute the necessary repair by unwedging the jammed button.

I have two main problems with this. First, you've got what's *obviously* a simple physical problem that can very probably be repaired in all of a minute flat with the right set of tools. But instead of letting their vaunted support guys give this a shot, they're encouraging customers—many of whom presumably don't know any better—to shell out a ludicrous amount of money to replace it and send the old one in....

Second, the iPhone itself is pointlessly designed to deter self service. Sure, the large majority of users are never going to want to crack their phone open. Then again, most users probably don't want to crack their desktops or laptops open, but we don't expect manufacturers to go out of their way to make it difficult to do. Again, in the instance, this was 15 minutes screwing with the case for a problem that took literally seconds to fix.<sup>1</sup>

With due respect to Sanchez, the *point* of deterring self-service is the price of a new phone. It's a fairly common business model: sell printers cheap, but sell product-specific toner at an enormous monopoly markup; sell blood glucometers cheap, but charge \$100 a box for the testing strips. In the old days, it was cheap electric typewriters and expensive ribbons. And of course, thanks to "intellectual property" law, it's illegal to manufacture generic accessories for someone else's product.

Eric Hunting suggests that the process of technological innovation under corporate capitalism is laying the groundwork for modularization. The high costs of technical innovation, the difficulty of capturing value from it, and the mass customization or long tail market, taken together, create pressures for "modularization around common architectural platforms in order to compartmentalize and distribute development cost risks, the result being 'ecologies' of many small companies independently and competitively developing intercompatible parts for common product platforms."

And Hunting points out that the predominant "outsource everything" and "contract manufacturing" model increasingly renders corporate hubs obsolete, and makes it possible for contractees to circumvent the previous corporate principals and undertake independent production on their own account.<sup>2</sup> A good example is the networked industrial economies of northern Italy, with "whole villages with power tools sub-contracting for the industrial giants of the motor industry, and when hit by recession, turning to other kinds of industrial components."<sup>3</sup>

Kirkpatrick Sale speculated on the potential for small town and neighborhood repair and recycling centers to put back into service the almost endless supply of appliances currently sitting in closets and basements, as well as "remanufacturing centers" for (say) small engines and refrigerators.<sup>4</sup> Such centers, built on the foundation of existing small machine shops and "hobby" workshops, will likely spring up to custom machine parts to

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1 Julian Sanchez, "Dammit, Apple," *Notes from the Lounge*, June 2, 2008 <<http://www.juliansanchez.com/2008/06/02/dammit-apple/>>.

2 Comment under Michel Bauwens, "Phases for implementing peer production: Towards a Manifesto for Mutually Assured Production," P2P Foundation *Forum*, August 30, 2008 <<http://p2pfoundation.ning.com/forum/topic/show?id=2003008%3ATopic%3A6275&page=1&commentId=2003008%3AComment%3A6377&x=1#2003008Comment6377>>.

3 Colin Ward, "Anarchism and the informal economy," *The Raven* No. 1 (1987), pp. 31-32.

4 Kirkpatrick Sale, *Human Scale* (New York: Coward, McCann, & Geoghegan, 1980), p. 406.

keep appliances running after Whirlpool implodes.

Such small shops, networking together for distributed production of parts for a common peer-produced design, may well become the backbone of a networked manufacturing economy on the Emilia-Romagna model. A good prototype for the emergence of such a networked industrial model is Jane Jacobs' account of the Japanese bicycle industry. The industry had its origins in the production in bicycle shops of replacement parts for Western bikes:

...shops to repair [imported bicycles] had sprung up in the big cities.... Imported spare parts were expensive and broken bicycles were too valuable to cannibalize the parts. Many repair shops thus found it worthwhile to make replacement parts themselves--not difficult if a man specialized in one kind of part, as many repairmen did. In this way, groups of bicycle repair shops were almost doing the work of manufacturing entire bicycles. That step was taken by bicycle assemblers, who bought parts, on contract, from repairmen: the repairmen had become "light manufacturers."<sup>1</sup>

This dovetails with speculation by an assortment of other writers on decentralist economics, including Colin Ward, Keith Paton and Karl Hess. Ward suggests, for example,

the pooling of equipment in a neighborhood group. Suppose that each member of the group had a powerful and robust basic tool, while the group as a whole had, for example, a bench drill, lathes and a saw bench to relieve the members from the attempt to cope with work which required these machines with inadequate tools of their own, or wasted their resources on under-used individually-owned plant. This in turn demands some kind of building to house the machinery: the Community Workshop.<sup>2</sup>

Such workshops might bridge the gap between leisure and self-employment, and enable the unemployed to "make a livelihood for themselves." He cites the example of the New Towns in Britain, where

it has been found necessary and desirable to build groups of small workshops for individuals and small businesses engaged in such work as repairing electrical equipment or car bodies, woodworking and the manufacture of small components. The Community Workshop would be enhanced by its cluster of separate workplaces for 'gainful' work. Couldn't the workshop become the community *factory*, providing work or a place for work for anyone in the locality who wanted to work that way, not as an optional extra to the economy of the affluent society which rejects an increasing proportion of its members, but as one of the prerequisites of the worker-controlled economy of the future?

Ward quotes from an earlier pamphlet by the anarchist Keith Paton, in which he suggested the same idea to members of the Claimants Union as a way to use their skills to serve their own community rather than competing for jobs in the capitalist economy:

...[E]lectrical power and 'affluence' have brought a spread of *intermediate* machines, some of

1 Jane Jacobs, *The Economy of Cities* (New York: Vintage Books, 1969, 1970), pp. 63-64.

2 Colin Ward, *Anarchy in Action* (London: Freedom Press, 1982), p. 94.

*them very sophisticated, to ordinary working class communities. Even if they do not own them (as many claimants do not) the possibility exists of borrowing them from neighbours, relatives, ex-workmates. Knitting and sewing machines, power tools and other do-it-yourself equipment comes in this category. Garages can be converted into little workshops, home-brew kits are popular, parts and machinery can be taken from old cars and other gadgets. If they saw their opportunity, trained metallurgists and mechanics could get into advanced scrap technology, recycling the metal wastes of the consumer society for things which could be used again regardless of whether they would fetch anything in a shop. Many hobby enthusiasts could begin to see their interests in a new light.<sup>1</sup>*

Karl Hess also discussed community workshops--or as he called them, "shared machine shops"--in *Community Technology*.

The machine shop should have enough basic tools, both hand and power, to make the building of demonstration models or test facilities a practical and everyday activity.... [T]he shop might be... stocked with cast-off industrial tools, with tools bought from government surplus through the local school system... Work can, of course, be done as well in home shops or in commercial shops of people who like the community technology approach....

Thinking of such a shared workshop in an inner city, you can think of its use... for the maintenance of appliances and other household goods whose replacement might represent a real economic burden in the neighborhood....

...The machine shop could regularly redesign cast-off items into useful ones. Discarded refrigerators, for instance, suggest an infinity of new uses, from fish tanks, after removing doors, to numerous small parts as each discarded one is stripped for its components, which include small compressors, copper tubing, heat transfer arrays, and so on. The same goes for washing machines....

Hess linked his idea for a shared machine shop to another idea, "[s]imilar in spirit," the shared warehouse:

The shared warehouse... should collect a trove of bits and pieces of building materials.... There always seems to be a bundle of wood at the end of any project that is too good to burn, too junky to sell, and too insignificant to store. Put a lot of those bundles together and the picture changes to more and more practical possibilities of building materials for the public space.

Spare parts are fair game for the community warehouse. Thus it can serve as a parts cabinet for the community technology experimenter....

A problem common to many communities is the plight of more resources leaving than coming back in.... The shared work space and the shared warehouse space involve a community in taking a first look at this problem at a homely and nonideological level.<sup>2</sup>

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1 Keith Paton, *The Right to Work or the Fight to Live?* (Stoke-on-Trent, 1972), in Ward, *Anarchy in Action*, pp. 108-109.

2 Karl Hess, *Community Technology* (New York, Cambridge, Hagerstown, Philadelphia, San Francisco, London, Mexico City, Sao Paulo, Sydney: Harper & Row, Publishers, 1979), pp. 96-98.

The importance of the informal and household economies for producing the use-value we consume will probably expand by an order of magnitude, operating on essentially the same principle as the open-source community: low cost production using spare capacity of capital equipment that people own anyway. This was already true, to a large extent, when Borsodi wrote on the potential for home machine production. The revolution described by Borsodi is being further intensified by the emergence of the cheap desktop manufacturing technologies for custom machining parts in small batches. The availability of such technology, coupled with the promise of LETS systems and microcredit for aggregating dispersed capital, will greatly lower the overall capital outlays needed for networked physical production of light and medium consumer goods.

Peer production and the open source model were originally developed in the immaterial realm, leading to the stresses on the culture industry described earlier. But as technology for physical production becomes feasible on increasingly smaller scales and at less cost, and as the transaction costs for pooling many dispersed small-scale capitals for a single venture approach zero, there is less and less disconnect between the respective applications of peer production principle in the immaterial and physical realms. In effect, the distinction between Richard Stallman's "free speech" and "free beer" is eroding in the realm of physical production. Michel Bauwens writes:

- \*P2P can arise not only in the immaterial sphere of intellectual and software production, but wherever there is access to distributed technology: spare computing cycles, distributed telecommunications and any kind of viral communicator meshwork.
- \*P2P can arise wherever other forms of distributed fixed capital are available: such is the case for carpooling, which is the second most used mode of transportation in the U.S....
- \*P2P can arise wherever financial capital can be distributed. Initiatives such as the ZOPA bank point in that direction. Cooperative purchase and use of large capital goods are a possibility.<sup>1</sup>

This should have an enormous impact, as well, on the total amount of labor required to support our current standard of living. Management guru Thomas Peters likes to gush that some ninety percent of product price these days is "ephemera" or "intellect," as opposed to materials and labor cost.<sup>2</sup> Translated into English, this means that most of commodity price is embedded rents on "intellectual property" and other artificial property rights, over and above the cost of production. When physical manufacturing is stripped of the cost of proprietary design and technology, and the consumer-driven, pull model of distribution strips away most of the immense marketing cost, we will find that the portion of price formerly made up of such intangibles will implode, and the remaining price based on actual materials and labor cost will approach an order of magnitude reduction. In such a world, where the price of the goods we consume no longer included the many embedded rents on privilege, we can likely maintain the existing standard of living with an average work week of one or two days.

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1 Michel Bauwens, "The Political Economy of Peer Production," *CTheory*, December 2005 <<http://www.ctheory.net/articles.aspx?id=499>>.

2 Tom Peters. *The Tom Peters Seminar: Crazy Times Call for Crazy Organizations* (New York: Vintage Books, 1994), pp. 10-12.

The importance of Bauwens' "spare cycles," in particular, is suggested by an exchange between Jed Harris and Charles Johnson. Harris writes:

The change that enables widespread peer production is that today, an entity can become self-sustaining, and even grow explosively, with very small amounts of capital. As a result it doesn't need to trade ownership for capital, and so it doesn't need to provide any return on investment.<sup>1</sup>

But beyond that, Johnson points out, peer production can take place *even when significant capital investments are required*, thanks to the way "both emerging distributed technologies in general, and peer production projects in particular, facilitate the *aggregation of dispersed capital*--without it having to pass through a single capitalist checkpoint, like a commercial bank or a venture capital fund..." More importantly,

because of the way that peer production projects distribute their labor, peer-production entrepreneurs can also take advantage of spare cycles on existing, widely-distributed capital goods — tools like computers, facilities like offices and houses, software, etc. which contributors own, which they still would have owned personally or professionally whether or not they were contributing to the peer production project, and which can be put to use as a direct contribution of a small amount of fractional shares of capital goods directly to the peer production project. So it's not just a matter of cutting total aggregate costs for capital goods (although that's an important element); it's also, importantly, a matter of new models of *aggregating the capital goods* to meet whatever costs you may have, so that small bits of available capital can be rounded up without the intervention of money-men and other intermediaries.<sup>2</sup>

In making productive use of idle capacity (or "spare cycles") of capital goods the average person owns anyway, providing a productive outlet for the surplus labor of the unemployed, and transforming the small surpluses of household production into a ready source of exchange value, the informal economy has made the stone which the builders refused into its cornerstone.

Consider, for example, the process of running a small, informal brew pub or restaurant out of your home, under a genuine free market regime. Buying a brewing kettle and a few small fermenting tanks for your basement, using a few tables in an extra room as a public restaurant area, etc., would require at most a bank loan for a few thousand dollars. And with that capital outlay, you could probably service the debt with the margin from a few customers a week. A modest level of business on evenings and weekends, probably drawn from among your existing circle of acquaintances, would enable you to initially shift some of your working hours from wage labor to work in the restaurant, with the possibility of gradually phasing out wage labor altogether or scaling back to part time, as you built up a customer base. In this and many other lines of business, the minimal entry costs and capital outlay mean that the minimum turnover

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1 Jed Harris, "Capitalists vs. Entrepreneurs," *Anomalous Presumptions*, February 26, 2007  
<<http://jed.jive.com/?p=23>>.

2 Charles Johnson, "Dump the rentiers off your back," *Rad Geek People's Daily*, May 29, 2008  
<[http://radgeek.com/gt/2008/05/29/dump\\_the/](http://radgeek.com/gt/2008/05/29/dump_the/)>.

required to pay the overhead and stay in business would be quite modest. In that case, a lot more people would be able to start small businesses for supplementary income and gradually shift some of their wage work to self employment, with minimal risk or sunk costs.

The savings in overhead, in the informal economy, are further compounded by the lack of administrative cost from paying a boss and office staff in addition to those providing the actual services. As described by Scott Burns in *The Household Economy*, the portion of a tradesman's service call that goes to feed the organization is greater than the portion he takes home. A plumbing firm, temp agency, and the like, typically charges around two and one-times the price for its employee's labor that it pays as an hourly wage. Assuming equal takehome pay, a plumber and accountant must each work two and one-half hours for one hour of the other's work.<sup>1</sup>

Roderick Long speculated, along similar lines, in the November issue of *Cato Unbound*:

In the absence of licensure, zoning, and other regulations, how many people would start a restaurant *today* if all they needed was their living room and their kitchen? How many people would start a beauty salon *today* if all they needed was a chair and some scissors, combs, gels, and so on? How many people would start a taxi service *today* if all they needed was a car and a cell phone? How many people would start a day care service *today* if a bunch of working parents could simply get together and pool their resources to pay a few of their number to take care of the children of the rest?<sup>2</sup>

Shawn Wilbur describes a similar business model, based on his experience as a small used bookseller:

At my used bookstore, I had an inventory of roughly 150,000 used books.... One trained bookseller, working diligent 75-80 hours work-weeks, could handle all the retail business, maintain the inventory, and even make some fairly steady headway on the backlogged inventory (which was mostly inherited from a previous owner's era.) If you've never been self-employed, well, and 80-hour work week sounds worse than it is, but it's a lot of work. On the other hand, the paperwork burden associated with taking on employees makes the long hours preferable in many ways. (Eliminate government paperwork, and one of the big impediments to hiring help in small business evaporates.)...

My little store was enormously efficient, in the sense that it could weather long periods of low sales, and still generally provide new special order books in the same amount of time as a Big Book Bookstore.<sup>3</sup>

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1 Scott Burns, *The Household Economy: Its Shape, Origins, & Future* (Boston: The Beacon Press, 1975), pp. 163-164.

2 Roderick Long, "Free Market Firms: Smaller, Flatter, and More Crowded," *Cato Unbound*, Nov. 25, 2008 <<http://www.cato-unbound.org/2008/11/25/roderick-long/free-market-firms-smaller-flatter-and-more-crowded>>.

3 Shawn Wilbur, "Who benefits most economically from state centralization?" *In the Libertarian Labyrinth*, Dec. 9, 2008 <<http://libertarian-labyrinth.blogspot.com/2008/12/who-benefits-most-economically-from.html>>

Businesses that operate on this low-overhead model can weather economic storms indefinitely, because almost all their revenue is free and clear. They can incrementally shift part of their income from wages to self-employment, or just supplement their income, with virtually no risk.

The new business model we have described, including both the Emilia-Romagna relocalized manufacturing model and the greatly expanded household and informal sector, would have many positive effects. They fall into three main categories.

First, it would result in prosperous, economically resilient communities insulated from the shocks of the business cycle. The ability to meet one's own consumption needs with one's own labor, using one's own land and tools, is something that can't be taken away by a recession or a corporate decision to offshore production to China. The ability to trade one's surplus for other goods, with a neighbor also using his own land and tools, is also much more secure than a job in the capitalist economy. And what is true individually is true of the community collectively.

Imagine an organic truck farmer who barter produce for plumbing services from a self-employed tradesman living nearby. Neither the farmer nor the plumber can dispose of his full output in this manner, or meet all of his subsistence needs. But both together have a secure and reliable source for all their plumbing *and* vegetable needs, and a reliable outlet for the portion of the output of each that is consumed by the other. The more trades and occupations brought into the exchange system, the greater the portion of total consumption needs of each that can be reliably met within a stable sub-economy. At the same time, the less dependent each person is on outside wage income, and the more prepared to weather a prolonged period of unemployment in the outside wage economy.

Borsodi described the cumulative effect of the concatenation of uncertainties in an economy of large-scale factory production for anonymous markets:

Surely it is plain that no man can afford to be dependent upon some other man for the bare necessities of life without running the risk of losing all that is most precious to him. Yet that is precisely and exactly what most of us are doing today. Everybody seems to be dependent upon some one else for the opportunity to acquire the essentials of life. The factory-worker is dependent upon the man who employs him; both of them are dependent upon the salesmen and retailers who sell the goods they make, and all of them are dependent upon the consuming public, which may not want, or may not be able, to buy what they may have made.<sup>1</sup>

Subsistence, barter, and other informal economies, by reducing the intermediate steps between production and consumption, also reduce the contingency involved in consumption. To borrow a useful concept from the Marxists: if the realization of capital follows a circuit, the same is also true of labor. And the more steps in the circuit, the more likely the circuit is to be broken, and the realization of labor (the transformation of

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<sup>1</sup> Ralph Borsodi. *Flight from the City: An Experiment in Creative Living on the Land* (New York, Evanston, San Francisco, London: Harper & Row, 1933, 1972), p. 147.



labor into use-value, through the indirect means of exchanging one's own labor for wages, and exchanging those wages for use-value produced by someone else's labor) is to fail.

Marx, in *The Poverty of Philosophy*, argued that the boom-bust cycle was inherent in industrial capitalism because of the imperatives of large-scale production. Industry was forced to produce in large batches, without regard to demand. It would be impossible to proportion output to demand without a return to small-scale, artisan production.<sup>1</sup> And for Marx, of course (as for the technocratic apostles of economy of scale in the twentieth century), "artisan" equated to "primitive." But Marx was wrong in assuming that large-scale production was necessary for a high standard of living.

Small-scale production, within a diversified local economy, is ideal for the stable coordination of supply to demand. As Paul Goodman wrote,

such a tight local economy is essential if there is to be a close relation between production and consumption, for it means that prices and the value of labor will not be so subject to the fluctuations of the vast general market.... That is, within limits, the nearer a system gets to simple household economy, the more it is an economy of specific things and services that are bartered, rather than an economy of generalized money.<sup>2</sup>

Leopold Kohr, in the same vein, compared local economies to harbors in a storm in their insulation from the business cycle and its extreme fluctuations of price.<sup>3</sup>

Along the same lines, economic decentralization would make communities less vulnerable to economic blackmail on the current pattern: large corporations using the prospect of a new store or factory to induce a corporate welfare bidding war between communities. If the typical manufacturing firm were a factory of a few dozen workers or fewer serving a local market, rather than a large oligopoly firm serving a national market and pushing a product marketed around national brand identification, it would be *a lot* less feasible to pick up and move. That's especially true, given the effect the elimination of transportation subsidies would have on a business model based on long-distance distribution. At the same time, if there were many small and medium-sized employers in manufacturing, instead of one big corporation colonizing a locality, people would be a lot more prone to say "good riddance!"

Communities of locally owned small enterprises are much healthier economically than communities that are colonized by large, absentee-owned corporations. For example, a 1947 study compared two communities in California: one a community of small farms, and the other dominated by a few large agribusiness operations. The small farming community had higher living standards, more parks, more stores, and more civic,

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1 Karl Marx. *The Poverty of Philosophy*, Marx and Engels *Collected Works*, vol. 6 (New York: International Publishers, 1976).

2 Paul and Percival Goodman, *Communitas*, p. 170.

3 Leopold Kohr, *The Overdeveloped Nations: The Diseconomies of Scale* (New York: Schocken Books, 1977), p. 110.

social and recreational organizations.<sup>1</sup>

Bill McKibben made the same point in *Deep Economy*. Most money that's spent buying stuff from a national corporation is quickly sucked out of the local economy, while money that's spent at local businesses circulates repeatedly in the local economy and leaks much more slowly to the outside. According to a study in Vermont, substituting local production for only ten percent of imported food would create \$376 million in new economic output, including \$69 million in wages at over 3600 new jobs. A similar study in Britain found the multiplier effect of ten pounds spent at a local business benefited the local economy to the tune of 25 pounds, compared to only 14 for the same amount spent at a chain store.

The farmer buys a drink at the local pub; the pub owner gets a car tune-up at the local mechanic; the mechanic brings a shirt to the local tailor; the tailor buys some bread at the local bakery; the baker buys wheat for bread and fruit for muffins from the local farmer. When these businesses are not owned locally, money leaves the community at every transaction.<sup>2</sup>

Second, it would drastically increase the bargaining power of labor. Since the rise of the factory system and large-scale wage employment, capital has depended on the ability to externalize many of its reproduction functions on the non-monetized informal and household economies, and on organic social institutions like the family which were outside the cash nexus.

Historically, as Immanuel Wallerstein argued, capital has relied upon its superior bargaining power to set the boundary between the money and social economies to its own advantage. Its attitude toward the household and informal economies has been ambivalent. It is in the interest of the employer not to render the worker *totally* dependent on wage income, because without the ability to carry out some reproduction functions through the production of use value within the household subsistence economy, the worker will be "compelled to demand higher real wages...."<sup>3</sup> On the other hand, too large a household meant that "the level of work output required to ensure survival was too low," and "diminished pressure to enter the wage-labor market."<sup>4</sup> The household economy has allowed to function to the extent that it bears reproduction costs that would otherwise have to be internalized in wages; but it has been suppressed (as in the Enclosures) when it threatens to increase in size and importance to the point of offering a basis for independence *from* wage labor.

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1 L. S. Stavrianos. *The Promise of the Coming Dark Age* (San Francisco: W. H. Freeman and Company, 1976), p. 41.

2 Bill McKibben, *Deep Economy: The Wealth of Communities and the Durable Future* (New York: Times Books, 2007), p. 165.

3 Immanuel Wallerstein and Joan Smith, "Households as an institution of the world-economy," in Smith and Wallerstein, eds., *Creating and Transforming Households: The constraints of the world-economy* (Cambridge; New York; Oakleigh, Victoria; Paris: Cambridge University Press, 1992), p. 16. [3-23]

4 Immanuel Wallerstein, "Household Structures and Labor-Force Formation in the Capitalist World Economy," in Joan Smith, Immanuel Wallerstein, Hans-Dieter Evers, eds., *Households and the World Economy* (Beverly Hills, London, New Delhi: Sage Publications, 1984), p. 20.

The owning and employing classes' fear of the subsistence economy, which led to the Enclosures, made perfect sense. For as Kropotkin asked:

If every peasant-farmer had a piece of land, free from rent and taxes, if he had in addition the tools and the stock necessary for farm labour--Who would plough the lands of the baron? Everyone would look after his own....

If all the men and women in the countryside had their daily bread assured, and their daily needs already satisfied, who would work for our capitalist at a wage of half a crown a day, while the commodities one produces in a day sell in the market for a crown or more?<sup>1</sup>

We are now experiencing a revolutionary shift in competitive advantage from wage labor to the informal economy, far beyond anything the propertied classes of two hundred years ago could have imagined in their worst nightmares. The rapid growth of technologies for home production in the twentieth century, based on small-scale electrically powered machinery and new forms of intensive cultivation, has radically altered the comparative efficiencies of large- and small-scale production. This was pointed out by Ralph Borsodi almost eighty years ago, but the potential of cheap desktop machine tools like the multi-machine shifts the balance even further.

"Eleutheros," of *How Many Miles from Babylon?* blog, described the independence that results from access to the means of subsistence:

...if we padlocked the gate to this farmstead and never had any trafficking with Babylon ever again, we could still grow corn and beans in perpetuity....

...To walk away from Babylon, you must have choices.... Babylon, as with any exploitative and controlling system, can only exist by limiting and eliminating your choices. After all, if you actually have choices, you may in fact choose the things that benefit and enhance you and your family rather than things that benefit Babylon....

So I bring up my corn field in way of illustration of what a real choice looks like. We produce... our staple bread with no input at all from Babylon. So we always have the choice to eat that instead of what Babylon offers. We also buy wheat in bulk and make wheat bread sometimes, but if (when, as it happened this year) the transportation cost or scarcity of wheat makes the price beyond the pale, we can look at it and say, "No, not going there, we will just go home and have our cornbread and beans." Likewise we sometimes buy food from stands and stores, and on a few occasions we eat out. But we always have the choice, and if we need to, we can enforce that choice for months on end....

Your escape from Babylon begins when you can say, "No, I have a choice. Oh, I can dine around Babylon's table if I choose, but if the Babylonian terms and conditions are odious, then I don't have to."<sup>2</sup>

The knowledge that you are debt-free and own your living space free and clear, and

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1 Peter Kropotkin, *The Conquest of Bread* (New York: Vanguard Press, 1926), pp. 36-37.

2 Eleutheros, "Choice, the Best Sauce," *How Many Miles from Babylon*, October 15, 2008 <<http://milesfrombabylon.blogspot.com/2008/10/choice-best-sauce.html>>.

that you *could* keep a roof over your head and food on the table without wage labor indefinitely, if you had to, has an incalculable effect on your bargaining power here and now, even while capitalism persists. As Borsodi observed almost eighty years ago, his ability to "retire" on the household economy for prolonged periods of time--and potential employers' knowledge that he could do so--enabled him to negotiate far better terms for what outside work he did decide to accept.

It is remarkable how much more appreciative of one's work employers and patrons become when they know that one is independent enough to decline unattractive commissions. And of course, if the wage-earning classes were generally to develop this sort of independence, employers would have to compete and bid up wages to secure workers instead of workers competing by cutting wages in order to get jobs.<sup>1</sup>

...Economic independence immeasurably improves your position as a seller of services. It replaces the present "buyer's market" for your services, in which the buyer dictates terms with a "seller's market," in which you dictate terms. It enables you to pick and choose the jobs you wish to perform and to refuse to work if the terms, conditions, and the purposes do not suit you. The next time you have your services to sell, see if you cannot command a better price for them if you can make the prospective buyer believe that you are under no compulsion to deal with him.<sup>2</sup>

...[T]he terms upon which an exchange is made between two parties are determined by the relative extent to which each is free to refuse to make the exchange.... The one who was "free" (to refuse the exchange), dictated the terms of the sale, and the one who was "not free" to refuse, had to pay whatever price was exacted from him.<sup>3</sup>

That was exactly the position labor was in when cottagers had independent access to subsistence on the commons. They sometimes chose to work for wages to supplement their income; but they did so only at times of their own choosing, and could eschew it indefinitely when the terms were not to their liking.

The potential for defection is heightened by the greater efficiency with which the counter-economy extracts use value from a given amount of land or capital. The corporate economy uses land and capital inefficiently precisely because it can afford to: the state has given them preferential access to land and capital, so that they have developed a business model based on extensive additions of inputs. Those engaged in the alternative economy, on the other hand, will be making the most intensive use of the land and capital available to them. The low-overhead business model of using "spare cycles" on existing capital equipment, mentioned above, is a good example. The potential for low-cost salvage of the corporate economy's discards, like adding RAM to computers whose price depreciates to almost nothing, is another.

Vinay Gupta, in "The Unplugged," describes it as "getting off at the bottom." Getting off at the top and supporting oneself in a conventional mass-consumption lifestyle, he

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1 Borsodi, *Flight From the City*, p. 100.

2 Borsodi, *This Ugly Civilization*, p. 335.

3 *Ibid.*, p. 403.

writes, requires enormous savings

A crash can wipe out your capital base and leave you helpless, because all you had was shares in a machine.

So we Unpluggers found a new way to unplug: an independent life-support infrastructure and financial architecture - a society within society--which allowed anybody who wanted to "buy out" to "buy out at the bottom" rather than "buying out at the top."

If you are willing to live as an Unpluggers does, your cost to buy out is only around three months of wages for a factory worker, the price of a used car. You never need to "work" again--that is, for money which you spend to meet your basic needs.

As he put it, the idea was to combine Gandhi's goals of economic self-sufficiency with Buckminster Fuller's means of getting more from less.<sup>1</sup>

So the balance of forces between the two economies will not be anywhere near as uneven as the distribution of property rights might indicate. As labor is withdrawn from the corporate economy and makes efficient use of the productive resources available to it, we will move increasingly toward a society where most of what the average person consumes is produced in a network of self-employed or worker-owned production, and the owning classes are left with large tracts of empty land and understaffed factories that are almost useless to them because it's so hard to hire labor at a profitable wage. At that point, the correlation of forces will have shifted until the corporate capitalists are islands in a cooperative sea--and their land and factories will be the last thing to fall, just like the U.S. Embassy in Saigon.

We're experiencing a singularity in which it is becoming impossible for capital to prevent a shift in the supply of an increasing proportion of the necessities of life from mass produced goods purchased with wages, to small-scale production in the informal and household sector. The upshot is likely to be something like Gupta's "Unplugged" movement, in which the possibilities for low-cost, comfortable subsistence off the grid result in exactly the same situation, the fear of which motivated the propertied classes in carrying out the Enclosures: a situation in which the majority of people can take wage labor or leave it, if it takes it at all, the average person works only on his own terms when he needs supplemental income for luxury goods and the like, and (even if he considers supplemental income necessary in the long run for an optimal standard of living) can afford in the short run to quit work and live off his own resources for prolonged periods of time, while negotiating for employment on the most favorable terms. It will be a society in which workers, not employers, have the greater ability to walk away from the table. It will, in short, be the kind of society E. G. Wakefield lamented in the colonial world of cheap and abundant land: a society in which labor is hard to get on any terms, and almost impossible to hire at a low enough wage to produce significant profit.

And finally, the changes we have described would result in a thriving, healthy civil

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<sup>1</sup> Vinay Gupta, "The Unplugged," How to Live Wiki, February 20, 2006  
<[http://howtolivewiki.com/en/The\\_Unplugged](http://howtolivewiki.com/en/The_Unplugged)>.

society. People who live under the control of a boss at their jobs, who are so dependent on continued employment that they develop the habit of doing anything necessary to please those in authority, are unlikely to behave as free men and women outside their jobs.

### **III. What Stands in the Way**

The problem is, the low-overhead business model I described above for the informal economy is, in almost countless ways, illegal. Take the restaurant/brew pub example. You have to buy an extremely expensive liquor license, as well as having an industrial sized stove, dishwasher, etc. And that level of capital outlay can only be paid off with a large dining room and a large kitchen-waiting staff, which means you have to keep the place filled or the overhead costs will eat you alive. These high entry costs and the enormous overhead are the reason you can't afford to start out really small and cheap, and the reason restaurants have such a high failure rate. It's illegal to use the surplus capacity of the ordinary household items we have to own anyway but remain idle most of the time, because of zoning and "safety" regulations which make it prohibitively expensive to sell a few hundred dollars surplus a month from the household economy. You can't do just a few thousand dollars worth of business a year, because the state mandates capital equipment on the scale required for a large-scale business if you engage in the business at all.

Government policy has the same effect at the national as the local level: to impose minimum capitalization levels and high overhead costs. We've already seen the importance of patents as a bulwark of planned obsolescence, making illegal what would otherwise be relatively cheap and convenient ways of keeping existing goods in operation. Legally mandated RFID chips for livestock, mandatory pasteurization, and expensive fees to officially recognized certification bodies for the right to use the term "organic," all impose a high minimum cost on engaging in agricultural production at all, and make it impossible (at least legally) for a household subsistence operation to market a few hundred or thousand dollars worth of surplus.

Eric Husman describes the effect of the recently passed Consumer Product Safety Improvement Act, which will essentially criminalize small-scale production in the apparel industry.

You can't just not use lead or phthalates. You can't just point out that you are using undyed organic hemp and wooden toggles. No, you must prove that you are lead- and phthalate-free. How? Well, at \$600-2400 per item, you ship it off to a certified testing lab. Plus, it's destructive testing, so kiss 1-12 samples of whatever it is goodbye. Also, you need to make sure that it is a representative lot, so no more repurposing of used clothes. Also, you need to provide this General Compliance Certificate (GCC) to anyone downstream who wants it. At any time. And be sure you can trace it by lot. Also, you may have to put up a bond in case they want to recall your product so that they know you can cover the cost of the recall.

Now, there's something you may not know about apparel manufacture.... You start by

developing about 20 styles and see what gets bought. Once buyers buy on the strength of the sample, you order the material and start sewing. The CPSIA testing has to be done on the final product (unit testing), not the inputs (component testing). So even though you are using the same organic cotton cloth and 5 different dyes and 3 different buttons, you can't get by with doing 8 tests (the cloth in 5 colors plus tests on each button). Nope, you have to do testing on 20 different styles x 5 different colors = 100 tests. Of which only 5 styles will ultimately go to market. That's a minimum of \$60,000 just for the testing, and you haven't even started to sell yet.

By the way, size does not matter in the eyes of this law. Haynes T-shirts? Yes, they have to test. Grandpa's handmade toys that he sells on E-bay? Yep, in fact E-bay and Etsy are already noting that legal compliance is a requirement of their user terms of use.<sup>1</sup>

None of this is any accident. The main function of licensing and regulations is to impose high minimum levels of capitalization, so that people are unable to meet a major part of their subsistence needs by producing for themselves or directly for each other. The economic model we described in the second part, as we saw, would have many wonderful effects. But from the perspective of those currently in control of the state capitalist system, they're all *very bad* effects.

But the good news, to repeat it once again, is that all these artificial barriers to market entry are rapidly becoming unenforceable. In any case, as crises intensify, enforcing local zoning and licensing laws will likely be near the bottom of the priority list for governments whose resources are stressed to the breaking point.

When the truckers abandon their rigs on the shoulder and the cargo jets are permanently grounded, local economies will frantically struggle to take up the slack as a matter of survival. A good many backyard "hobby" shops may find themselves at the center of a local manufacturing renaissance as they custom machine spare parts to keep appliances running, and become the nucleus of neighborhood repair-recycling-remachining facilities. Household vegetable production will exceed the rates of the WWII "Liberty Garden" era, and market gardeners will bring new land under cultivation to satisfy a public (sick of the empty shelves at the supermarket and the USDA Surplus commodities shipped in by the National Guard) that snatches produce off the tables at the Farmer's Market as fast as it appears.

James L. Wilson described his vision of a relocalized economy growing out of Jim Kunstler's "Long Emergency"—and a major part of the transition involved simply ignoring government interference:

"Well, you see all these people working on their gardens? They used to not be here. People had grass lawns, and would compete with each other for having the greenest, nicest grass. But your grandma came home from the supermarket one day, sat down, and said, 'That's it. We're going to grow our own food.' And the next spring, she planted a vegetable garden

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1 Eric Husman, "In which 30 thousand small manufacturers square off against mom, apple pie, and Ralph Nader," *GrimReader*, Dec. 9, 2008 <<http://www.zianet.com/ehusman/weblog/2008/12/in-which-30-thousand-small.html>>

where the grass used to be.

"And boy, were some of the neighbors mad. The Homeowners Association sued her. They said the garden was unsightly. They said that property values would fall. But then, the next year, more people started planting their own gardens....

"And people also started buying from farmer's markets, buying milk, meat, eggs and produce straight from nearby farmers. This was fresher and healthier than processed food. They realized they were better off if the profits stayed within the community than if they went to big corporations far away.

"This is when your grandma, my Mom, quit her job and opened started a bakery from home. It was actually in violation of the zoning laws, but the people sided with grandma against the government. When the government realized it was powerless to crack down on this new way of life, and the people realized they didn't have to fear the government, they became free. And so more and more people started working from home. Mommies and Daddies used to have different jobs in different places, but now more and more of them are in business together in their own home, where they're close to their children instead of putting them in day care."....<sup>1</sup>

Jeff Vail uses the hilltop towns of northern Italy as a model for the resilient communities that will emerge from the coming crisis.

How is the Tuscan village decentralized? Production is localized. Admittedly, everything isn't local. Not by a long shot. But compared to American suburbia, a great percentage of food and building materials are produced and consumed in a highly local network. A high percentage of people garden and shop at local farmer's markets.

How is the Tuscan village open source? Tuscan culture historically taps into a shared community pool of technics in recognition that a sustainable society is a non-zero-sum game. Most farming communities are this way—advice, knowledge, and innovation is shared, not guarded. Beyond a certain threshold of size and centralization, the motivation to protect and exploit intellectual property seems to take over (another argument for decentralization). There is no reason why we cannot share innovation in technics globally, while acting locally—in fact, the internet now truly makes this possible, leveraging our opportunity to use technics to improve quality of life.

How is the Tuscan village vernacular? You don't see many "Colonial-Style" houses in Tuscany. Yet strangely, in Denver I'm surrounded by them. Why? They make no more sense in Denver than in Tuscany. The difference is that the Tuscans recognize (mostly) that locally-appropriate, locally-sourced architecture improves quality of life. The architecture is suited to their climate and culture, and the materials are available locally. Same thing with their food—they celebrate what is available locally, and what is in season. Nearly every Tuscan with the space has a vegetable garden. And finally (though the pressures of globalization are challenging this), their culture is vernacular. They celebrate local festivals, local harvests, and don't rely on manufactured, mass-marketed, and global trends for their culture nearly as much as disassociated suburbanites—their strong sense of community gives

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<sup>1</sup> James L. Wilson, "Standard of Living vs. Quality of Life," *The Partial Observer*, May 29, 2008 <<http://www.partialobserver.com/article.cfm?id=2955&RSS=1>>.



prominence to whatever “their” celebration is over what the global economy tells them it should be.<sup>1</sup>

Brian Kaller, in *The American Conservative*, appeals to an American version of the northern Italian hilltop town: Mayberry.

Take one of the more pessimistic projections of the future, from the Association for the Study of Peak Oil, and assume that by 2030 the world will have only two-thirds as much energy per person. Little breakdowns can feed on each other, so crudely double that estimate. Say that, for some reason, solar power, wind turbines, nuclear plants, tidal power, hydroelectric dams, biofuels, and new technologies never take off. Say that Americans make only a third as much money, cut driving by two-thirds. Assume that extended families have to move in together to conserve resources and that we must cut our flying by 98 percent.

Many would consider that a fairly clear picture of collapse. But we have been there before, and recently. Those are the statistics of the 1950s--not remembered as a big time for cannibalism.<sup>2</sup>

Imagine that: the Main Street economy of Mayberry--but with modern electronics and black people!

The central point is that the industrial economy that emerges on the other side of these systemic crises will be almost unrecognizable. The transition will occur. But it can be either comparatively smooth or extremely rough, depending on whether our "leaders" choose to ease the transition by removing the barriers that stand in the way, or choose instead to divert the resources at their disposal to prop up the current system until it's too late to avert catastrophe.

That's why our focus now should be, not on government programs to manage the transition or government subsidies to successor technologies, but on pressuring government to get out of the way. As Benjamin Tucker put it, “the question before us is not... what measures and means of interference we are justified in instituting, but which ones of those already existing we should first lop off.”<sup>3</sup>

The most important change in government policy, in my opinion, is the immediate and unconditional withdrawal of all subsidies (including eminent domain) to airports and highways, and their total reliance on user fees for funding. In the case of highways, this would mean funding the Interstates with weight-based fees on heavy trucks, which cause the overwhelming majority of roadbed damage. If this were done, the railroads would begin restoring lost capacity as fast as they could lay new track on abandoned rights of

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1 Jeff Vail, "The Design Imperative," *A Theory of Power*, April 8, 2007 <<http://www.jeffvail.net/2007/04/design-imperative.html>>.

2 Brian Kaller, “Future Perfect: Stop Worrying and Learn to Love Expensive Oil,” *The American Conservative*, August 25, 2008 <[http://findarticles.com/p/articles/mi\\_7060/is\\_16\\_7/ai\\_n28558422/pg\\_1?tag=artBody;col1](http://findarticles.com/p/articles/mi_7060/is_16_7/ai_n28558422/pg_1?tag=artBody;col1)>.

3 Benjamin Tucker, “Voluntary Cooperation,” *Liberty*, May 24, 1890, in Tucker, *Instead of a Book, By a Man Too Busy to Write One* <<http://fair-use.org/benjamin-tucker/instead-of-a-book/voluntary-cooperation>>.

way.

Equally important is removing government supports to sprawl and monoculture. This would include eliminating zoning restrictions on mixed-use development, like home businesses and neighborhood grocers, and affordable housing in downtown areas (e.g. walkup apartments over stores). The extension of utilities to new developments should never be subsidized by ratepayers in older neighborhoods. Urban freeway systems should be funded with tolls.

Local licensing, zoning and safety laws whose main function is to criminalize low-overhead business models in the informal and household sectors should be eliminated.

“Intellectual property” should be eliminated as a barrier both to the development of modularized, easily repairable product design, and to competing open-source models of production.

Tax policy should focus on eliminating differential exemptions that favor centralized, capital-intensive, high-overhead forms of production. This would mean, in particular, eliminating the depreciation allowance, the R&D credit, the interest deduction on corporate debt, and the capital gains exemption of securities transactions involved in mergers and acquisitions—and then, at the very least, lowering the corporate income tax and capital gains tax rates to make them revenue-neutral.