

Laboring in the Network*

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Introduction

In recent years the network has become a popular metaphor to describe changes in the organization of production and work. In these discourses, the decentralized network stands in stark contrast to the vertically integrated organization of the Taylorist-Fordist factory of the postwar era. A number of authors, including Manuel Castells and Antonio Negri, have characterized the network structure as a positive phenomenon. Castells believes to have found a new capitalist rationality, replacing the old bureaucratic form of coordination, while Negri understands the network primarily as an expression of the emancipative potential of living labor. Both assumptions are questionable. Castells and Negri neglect two issues of critical importance: First, new information and communication technologies are not only instruments to improve communication and cooperation between workers, they also introduce new ways to control and divide labor. Second, the capitalist mode of production is characterized in a fundamental way by the contradiction between competition and cooperation. Even if this contradiction can be reproduced in various forms depending on the actual balance of class forces, it cannot be solved within capitalist societies. This is also true for the network.

The first section of the essay briefly touches on three main sources of the network metaphor: the Internet, the Third Italy, and Silicon Valley. The next section considers the concept of the network enterprise and presents the example of the network specialist, Cisco, to demonstrate how network enterprises function. Following that, I will discuss domination in network organizations and the contradiction between cooperation and competition and its alleged dissolution in the network structure. I conclude with brief comments about political strategies.

Sources of the Network Metaphor

A first, familiar source of the network metaphor can be traced back to the 1960s during the Cold War when the Pentagon developed the Internet as a form of communication that could withstand widespread destruction in the event of nuclear war. The result was a network that could not be controlled from any particular point. The computer network was later opened to academic and commercial users, and this led to the World Wide Web with its millions of connected workplaces and households. Because of its initial design, it is still not controllable from a central point—a source of continuous headaches for both commercial providers and the United States Central Intelligence Agency. This does not mean, however, that the Internet is necessarily a democratic institution, as some Internet theoreticians seem to believe.

A second source of the network metaphor is the discussion of the end of mass production and the emergence of industrial districts in the 1980s. Michael Piore and Charles Sabel played a particularly important role in these debates by propagating the theory of

flexible specialization as a solution for the crisis of Fordism. Besides other sources, they referred to the example of the Third Italy. In their narrative, Italian entrepreneurs responded to a massive wave of protests and strikes in the Sixties with a radical decentralization of production. Yet while decentralization initially was only a stopgap measure to regain control over production, dependent subcontractors subsequently started to federate and use “their collective capacities to devise innovative products and processes.” The result was the emergence of a “flexible network of small and medium sized firms, using more and more NC technology to adapt to rapidly shifting markets.”

The post-operaist theoretician Antonio Negri makes a similar argument. He characterizes decentralization as a response of capital to workers’ struggles and the loss of control in the factory. The result is a new kind of worker. Former foremen and workers who were laid off from the factory developed an “entrepreneurial spirit from below,” became independent entrepreneurs and “organized... a cooperation of producers in the territory.” This new worker embodies a “new character of labor power, autonomous in its attitude, often self-employed and increasingly immaterial.” Negri acknowledges in the same text that the small businesses in the Third Italy often only survived by exploiting their family members—what Piore and Sabel applaud as Italian “familialism”—and admits that the new entrepreneurial spirit also led to the rise of Lega Nord, the reactionary and separatist party based in Northern Italy. Still, he cannot conceal his admiration for the new type of self-employed workers. Maurizio Lazzarato summarizes this view as follows:

In contrast to the view of many theoreticians of post-Fordism, we do not believe that this new type of labor force is functional only for a new phase of capitalism and the related accumulation and reproduction processes. Instead, this labor force is the result of a “silent revolution” and the emergence of a new type of intellectual worker, who acts in an entrepreneurial fashion and is involved in shifting exchange relations and changing spacio-temporal networks.

A third origin of the network metaphor takes us back to the 1990s and into California’s Silicon Valley. Silicon Valley is widely known as a model of network-centered production and one of the main success stories of the American New Economy—at least until the dot.com crash of 2001. In Silicon Valley, the network is seen to be merging with industrial districts and the “entrepreneurial spirit from below” to facilitate the breakthrough of the network structure centered on the personal computer and other information and communication technologies. Manuel Castells, whose academic bestseller *The Rise of the Network Society* greatly helped disseminate the network metaphor, declares Silicon Valley is the genesis of modern network capitalism. Legend has it that Bill Gates, Steve Jobs and Steve Wozniak met here in informal circles like the Home Brew Computer Club and frankly exchanged ideas that would help them earn insane amounts of money. The network idea played a particularly important role insofar as the multibillionaires-to-be—influenced by the spirit of the Sixties—disliked hierarchical structures in big companies like IBM.

The emphasis on personalized devices, on interactivity, on networking and the relentless pursuit of new technological breakthroughs, even when it apparently did not make much business sense, was clearly in discontinuity

with the somewhat cautious tradition of the corporate world. The information technology revolution half-consciously diffused through the material culture of our societies the libertarian spirit that flourished in the 1960s movements.

Today Silicon Valley owes its prestige and success not so much to the “entrepreneurial spirit from below” as to the presence of information technology (IT) giants like Intel, Cisco, Hewlett Packard and Sun, well-funded research institutes, and a network of assemblers with an extraordinarily high percentage of migrants and women workers employed at low wages under poor working conditions. If there is an overarching characteristic of Silicon Valley, it is the absence of unions or other forms of organized social resistance. From this point of view, Silicon Valley can indeed be seen as a role model. But Silicon Valley is not only an interchange of worldwide information and communication networks, as argued by Castells and others. Silicon Valley is also an example for a new model of production and exploitation that is based on a radical deintegration and reintegration of value chains. Although individual parts of the value chain may indeed become more autonomous in this process, this does not mean that they can independently negotiate the terms on which they deliver their products and services.

The Network Enterprise

The more interesting parts of *The Rise of the Network Society* include the chapter on the network enterprise. Castells argues that in the wake of the information revolution, vertically integrated Fordist corporations are transformed into decentralized and horizontally structured network enterprises. In contrast to the traditional Fordist firm with all-encompassing hierarchies and bureaucratic control, the horizontal enterprise is a “dynamic and strategically planned network of self-programed, self-directed units based on decentralization, participation and coordination.” Castells even suggests that the network puts into question the further existence of competing multinational corporations.

Since most multinational firms participate in a variety of networks, depending on products, processes, and countries, the new economy cannot be characterized as being centered any longer on multinational corporations, even if they continue to exercise jointly oligopolistic control over markets. This is because corporations have transformed themselves into a web of multiple networks embedded in a multiplicity of institutional environments.

There is no doubt that the dominant organization of multinational corporations has undergone profound changes in the last three decades. The crisis of the 1970s and the subsequent acceleration in competition for diversified, fragmented and fast-changing markets forced corporations to cut production costs and make the organization of production and services more flexible. For this purpose, particular units were indeed broken off, outsourced and transformed into formally independent entities. Some of them were reintegrated in new organizations. Japanese manufacturers with their just-in-time supplier chains led the way in this respect. This was possible to the extent that most Japanese suppliers always had a much lower degree of union density as well as poorer working conditions and lower wages

compared to Toyota and Honda—and this without even considering the famous life-long employment relationships.

But the Japanese example also clearly shows that the different production units are not equal partners in the value chain. Control and dependence are reproduced in the supplier network. Outsourcing does not necessarily mean independence. In fact, it would be rather sarcastic to argue that the formally independent Asian footwear sweatshops are equal partners in the worldwide production network of Nike and Reebok. Yet the mode of control at Nike and Reebok differs considerably from vertical integration in the traditional Fordist factory. The same mechanism can increasingly also be observed in the IT sector where “brands are produced by globally organized webs of subcontractors.” Those organizations thus enjoy a dominant position that allows them to establish their own product specifications as general production standards. As Thomas Sablowski notes, “product development, marketing and distribution become core competences, whereas assembling processes, which were of pivotal importance in the Fordist system, are obviously only of minor importance for the control of the value chain.”

The network specialist, Cisco, is a case in point. Between 1993 and 2001, Cisco acquired 73 smaller companies and bought shares in approximately 100 start-ups, most of them producers of components. As minority share holder, Cisco was in a position to influence the prices of the component producers and keep prices of Cisco products low without formally integrating the suppliers into its own organization. At the same time, Cisco developed specific production standards that could be adopted by contract manufacturers. With this strategy, it became possible that out of 30 factories that produced Cisco products, only two were actually owned by Cisco. The rest were operated by formally independent contract manufacturers. By producing for different, and in some cases even competing IT companies, contract manufacturers attempt to exploit economies of scale. Cisco itself concentrated its own activities on product development and the maintenance of the customer interface. The “virtual integration” with the contract manufacturers, however, enabled Cisco to instantly check data on orders, inventories and deliveries with the result that “Cisco can exactly follow and control any processes in the value chain.” Compared to the Toyota system, the critical advancement lies in the fact that not only components but entire products are outsourced.

Meanwhile, similar tendencies can also be observed in the auto industry. DaimlerChrysler, for example, hired Magna International to produce its PT-Cruiser for the European market. Magna, an international parts manufacturer, not only received the contract but an entire factory, including the existing workforce. If this experiment proves to be successful, it will be duplicated. Despite repeated efforts by the Canadian Autoworkers and other unions, none of the many Magna plants in North America are unionized. This opens a new perspective for the Big Three auto makers, which have been unionized since the struggles of the 1930s and 40s and frequently complain about competitive disadvantages vis-à-vis nonunionized Japanese transplants.

Furthermore, Sablowski correctly emphasizes the connection between the deintegration and reintegration of the value chain and the rise of shareholder value. Briefly put, shareholder value entails an increasing orientation of corporations to capital markets. As

a result, short-term developments in share prices and rates of return become more important than long-term profitability of the respective business units. In turn, high share prices depend on a high degree of financial liquidity. Shareholder value orientation thus encourages managers to focus on core competencies—that is, those business areas where the corporation already has a dominant position on the world market—while other business areas are sold or shut down, even if they produce continuous surpluses. In Cisco's case, the desire for high liquidity caused management to lease buildings in order to prevent corporate debt. High liquidity, in turn, pushed up share prices at the stock market. In short, there is a systematic connection between the rise of shareholder value and the success of the network economy.

The Network as Part of a New Mode of Control?

Networks are not only a new form of cooperation, however. In combination with new information and communication technologies, they also impart new possibilities for organizing the social division of labor and establishing new modes of control. In their enthusiasm for the communicative aspects of personal computers and the Internet, Castells and Negri ignore the fact that the same technologies can also be used to relocate work and improve control over workers. The introduction of digital reporting systems like those developed by German market leader, SAP, enables headquarters to instantly access a large amount of information and data from its subsidiaries and suppliers around the world. In fact, the new possibilities introduced by the Internet and other information and communication technologies are an essential precondition for decentralization and network production. Based on a series of case studies on the relocation of work in Europe and Asia, Jörg Flecker and his colleagues draw the following conclusion:

The more decentralization and outsourcing is pushed forward, the more important it is to control far-flung business activities. In the use of information and communication technology... the possibility of decentralization, horizontal cooperation and self organization is thus only one side of the coin. Without the possibilities of steering and monitoring inherent in information and communication technologies, outsourcing and decentralization would arguably not be realized to the same extent.

In addition, the decentralized structure of the network facilitates the transformation of previously integrated business units into formally independent cost and profit centers, whereby data and information gathered from the application of new information and communication technologies can be used to increase the pressure on individual units and production sites to reduce costs. Thereby, formally independent units are forced to compete for contracts with other units in the same network or with external suppliers. This is a significant break with the Fordist system: While the traditional Fordist corporation was governed by centralized bureaucratic planning and control—in this respect General Motors did not function much differently than communist Hungary—the post-Fordist enterprise is made up by formally autonomous subunits that increasingly relate to each other through market relations. Markets that were previously external to the firm are incorporated into the factory. Manfred Moldaschl and Dieter Sauer call this process the “internalization of the

market.” With the subsequent expansion of market relations at the expense of bureaucratic control and coordination, management responsibility is restricted to the imposition of certain objectives—also known as benchmarks—while the challenge to achieve these targets is exceedingly left to the workers. Those units or workers that are not able to achieve the requested results are threatened with closures and job losses.

In addition to internal pressure, external pressure is also growing, because the application of the Internet and other information and communication technologies makes it increasingly easy to relocate work and production to other countries or parts of the world. Software engineers in Belgium, for example, find themselves competing with software engineers in India, where the average wage for software engineers is only 20 percent of the average salaries paid in Belgium. Experience has shown that in many cases the threat of relocation is enough to depress wages and working conditions. *Market-mediated control* is an indirect form of control. As such it presents an alternative to direct forms of control imposed by hierarchical-bureaucratic organizations that were challenged by the social struggles of the 1960s and 70s. According to Günter Bechtle and Dieter Sauer, indirect control is “an instrument that translates the market into more or less abstract objectives or magnitudes and makes it into a quasi-natural condition of work.” As a tendency, market-mediated control exists within industrial production as well as private and public service industries, where market conditions are reproduced by making workers responsible for total satisfaction of service-users.

For workers, indirect control entails both increasing autonomy in task performance and growing pressures to conform to abstractly quantitative market imperatives. In connection with a simultaneous flexibilization and erosion of employment standards, workers put in overtime—including unpaid overtime—and compromise holidays and weekends to meet increasingly tight deadlines. At the same time, the marketization of production entails a far-reaching recommodification and commercialization of labor power. Hans Pongratz and Günter Voß have tried to capture this development by creating the concept of the “entrepreneur of one’s own labor power.” Even if the associated “dominance through self-dominance” tends to underestimate the fragility of domination in the network enterprise, it correctly points to an acceleration of contradictions. In a certain sense, fundamental contradictions of the capitalist mode of production are passed on to the workers. “As elaborate and subtly structured [indirect] systems of control may be... they do not solve contradictory pressures. They only leave them to the workers to deal with.” This development is particularly true for the previously mentioned new self-employed workers. If they are lucky enough to possess scarce qualifications—as indeed was the case for IT-specialists during most of the 1990s—these workers are forced to compete for contracts with other self-employed workers. The ensuing competition makes it very difficult to develop collective structures to fight exploitation. Not surprisingly, self-employed workers are often suffering from income insecurity as well as comparably low wages if one calculates hourly rates and deducts social security contributions and taxes.

Cooperation and Competition

Even if the cooperation of direct producers cannot be permanently contained within the capitalist division of labor, cooperation is nevertheless characterized by this very division and as such reflects existing power relations in society. This is exemplified by gender and race discrimination which persists in many workplaces (this also true for Silicon Valley). These forms of discrimination are the result of a more fundamental contradiction within capitalist societies: Capital depends on the cooperation of the direct producers, who cooperate in increasingly complex divisions of labor. At the same time, however, capital must individualize and differentiate workers and make them compete with each other in order to increase the share of surplus value and maintain its dominance vis-à-vis labor. The contradiction can be expressed as a social relation with two opposite poles: cooperation and competition. Which form this relation takes in a concrete social formation depends on class struggle.

After the establishment of Taylorism in the 1920s and the militant struggles of the new American industrial unions in the 1930s and 40s, the social division of labor—and with it, the relationship between the direct producers—was institutionalized in detailed job descriptions amounting to hundreds of pages in some collective agreements. In this system, competition between workers did not take the form of persistent constraints to improve one's own performance in comparison to others (with the possible exception of piece rate payments). Instead, it was imposed by a multitude of hierarchical layers and positions and related career patterns. In some respects, the many rules had a protective effect insofar as they clarified what the individual laborer was expected to do to keep his or her job. (An important effect of the new forms of exploitation is that workers no longer know when they have worked enough). At the same time, however, Taylorist forms of control were also extremely restrictive and dull, for they were meant to prevent the laborer from developing his or her own thoughts. As a result of the struggles of the 1960s and 70s, post-Fordism led to a certain reintegration of conception and execution of work, as well as a deregimentation and liberation of subjectivity and cooperation, or, in other words, to a new autonomy in work. But the “new subjects” are also subjected to growing competition by the introduction of market-mediated control. Direct hierarchical-bureaucratic control is replaced by indirect forms of control—including, for example, target agreements. This does not mean, however, that competition no longer exists and capital is external to cooperation, as assumed by Negri and Hardt:

Cooperation, or the association of producers, is posed independent of the organizational capacity of capital; the cooperation and subjectivity of labor have found a point of contact outside of the machinations of capital. Capital becomes merely an apparatus of capture, a phantasm, an idol. Around it move radically autonomous processes of self-valorization that not only constitute an alternative basis of potential development but also actually represent a new constituent foundation.

If cooperation and competition are two poles of a social relation that constitute capitalist domination, capital can never be external to cooperation in capitalist societies. In other words, the cooperation of direct producers in organizations that is meant to produce surplus value is always shaped by the profit motive. This is also true for the new self-employed workers, who may be formally independent and own their means of production but relate to each other not only as colleagues and friends but also as competitors. Of course,

social struggles can give different forms to the contradiction between cooperation and competition. The network, in my view, is nothing else than an expression of this contradiction in times shaped by new technological possibilities and shifting class relations. In this regard, the network resembles the “old dream of reconciliation of cooperation and competition,” as noted by Ulf Kadritzke. Forms of cooperation that are external to capital, however, can be found in those areas of social life that are excluded from competition. This includes all forms of cooperation that are based on solidarity and that are not for profit. The problem is that recommodification and the dismantling of the welfare state leave less and less room for such experiments.

Conclusion

Despite their very different theoretical and political backgrounds, Manuel Castells and Antonio Negri come to the same assessment with regard to some developments in contemporary capitalism. Both tend to adhere to technological determinism while neglecting contradictions and irrationalities caused by competition and markets. In Castells’ case, this conclusion stems from a Weberian tradition that has always emphasized an alleged rationality within the capitalist system. While Weber understood bureaucracy as expression of capitalist rationality, Castells ascribes the same role to the network. Negri comes to the same conclusion, because he understands labor and capital as two independent social forces. Labor successfully undermined the bureaucratic-hierarchical commando in the factory and subsequently imposed a new structure upon capital—the network. Since capital lost direct control over labor in this process, it is now external to cooperation and to the network. This view is undoubtedly attractive, because it liberates labor from the role as victim of a historical process and instead turns it into the primary agent of capitalist transformation, whereas capital can only react.

Negri’s perspective ignores the complexity and contradictory character of capitalist social relations, however. In particular, it ignores capital’s response to the struggles of the 1960s and 70s and the fact that social reality for many workers has become increasingly contradictory, if not plainly worse in the last three decades—as can be seen, for example, in the contradiction between growing autonomy in the organization of work and increasing stress and working hours. As John Holloway has rightly noted, in Negri’s narrative, labor and capital seem to fight as two independent titans for world dominance. In the real world, however, labor and capital, or Empire and Multitude, are dependent on each other in contradictory ways. As Michael Lebowitz explains,

[t]he reproduction of capital requires the reproduction of wage-labor as such; the reproduction of wage-labor as such requires the reproduction of capital. The two processes of production thus presuppose each other. They are a unity. Capital and wage-labor, thus, exist as opposites that are united within the capital/wage-labor relation.

Hence it is not enough to hope for the increasingly cooperative and immaterial aspects of new forms of work in contemporary capitalism as sources for socialist transformation. Instead, we must focus on the renewed manifestation of fundamental

contradictions of capitalism and make them the privileged targets of our political actions. In these contradictions—including the contradiction between paid and unpaid labor as well as the need for individual autonomy and collective security—rests the necessity and potential for new struggles and for an emancipatory transformation of capitalism. In this light, Alex Demirovic is entirely right when he suggests that we should begin by developing an understanding of how

individuals and social groups reproduce the conditions under which they live in and through lived contradictions, in and through active resistance and in full consciousness of their own conditions. We need a more precise understanding of the diverse forms of struggle—not only of political struggles but above all of social struggles, which often manifest themselves as daily desperation, disappointment, discouragement, annoyance, anger, as mobbing, chicanery, refusal, absenteeism, self-motivation, friendly conversation, hanging out. In all this, it is a matter of determining how social actors and their social practices give a new form to the contradiction between labor and capital.