The Capitalist Firm in the 21st Century:

Emerging Patterns

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Introduction

These are confusing times for citizens, policy-makers and pundits alike. The pace of economic and technological change appears relentless, but the direction is unfamiliar. Joseph Schumpeter (1934) was one of the first analysts to observe that innovation brings with it the winds of creative destruction, but few were prepared for the gales of the past decade. Consider just a few of the discordant trends in the U.S. and the global economy.

Alongside the tremendous upsurge of startup companies, created in the U.S. and abroad as well, we see the creation of global giants in a number of key industries. The startups are regaled for their swiftness, their impressive array of new products and services, and their new business practices. But in banking, oil, autos, and telecommunications we see the making of global corporate behemoths, the product of mergers such as Exxon and Mobil, Travelers Group and Citibank, Vodaphone Group and Air Touch, and Daimler Benz, Chrysler and Mitsubishi, that are among the largest deals in history. And corporations continue to acquire and grow even as evidence accumulates that the hoped for synergies and integration are seldom achieved. Moreover, many of the startups continue the founding and acquisition cycle. In the e-commerce field, the dream of many founders has been to grow large enough to be noticed and bought up. Of course, some startups eventually grow large, and companies like America Online, Microsoft, or Cisco Systems have acquired hundreds of other firms along the way.

But which companies represent the old economy and which ones the new? Cisco Systems had only 250 or so employees back in 1989, but by January 2000 it had more than 26,000 and one of the largest market capitalizations of any company in the world. Cisco is a designer and maker of computer networking equipment, much of which it sells to traditional companies that are developing internet services. In so doing, Cisco makes the lines between the new and old economy

much blurrier. And the growing reshaping of corporate purchasing through business to business e-commerce renders the distinction between the old and the new economy even less meaningful.

Are the new economy companies in computers, wireless communications, electronic commerce, the life sciences and genomics creating a new industrial transformation or just a phenomenal amount of speculative excess? Red Herring magazine and its website, one of many new business publications that has grown fatter and fatter with dot com ads, routinely warns that internet company valuations are completely unrealistic even as it touts a new company or the latest technological application. Thus the speculative frenzy increases, and even though caution is warranted, people everywhere are afraid of being left out of the game, falling behind as others make their fortunes, and stuck in the "old world" as the new world companies ascend to greater and greater heights. People know that most of the new ventures are unrealistic, but the problem is they do not know which ones are and which ones aren't.

Wages and employment offer another puzzle. Unemployment is presently at a thirty-year low, but job security appears tenuous to many employees. Despite impressive performance, many U.S. companies continue to revamp jobs and organizational structures as if the economy were in a tailspin. More jobs were lost to downsizing in 1999 than in any previous year of the 1990s.[1] On the upside, nearly 22 million new jobs were created in the U.S. in the 1990s.[2] Some organizations now complain about the lack of corporate loyalty as employers have become buyers in a seller's market, forgetting that it was their practices of downsizing and contracting out that eroded worker loyalty. Consequently, both voluntary and involuntary departures from jobs have increased (Bernhardt et al 1998; Capelli et al 1997; Farber, 1996; Osterman, 1999, ch. 2).

[1] Reported in "Career evolution," The Economist, January 29, 2000, pp. 89-92.
[2] Reported in "The great American jobs machine," The Economist, January 15, 2000, p. 25.

Despite economic growth, productivity gains, and tight labor markets, there is widening income disparity as growth in the incomes of the winners far outpaces the modest wage gains of others. Moreover, the success of the winners is more and more tied to the fluctuations of the stock market. Industry sources estimate that 48% of the U.S. population now has money invested in stocks or stock funds, and roughly ten million workers hold equity in their own companies.[3] But for those whose jobs do not offer such opportunities, the gap grows wider. Silicon Valley is the epitome of these contradictions. In Palo Alto, the local mantra is that 64 millionaires are created daily, and this success drives the cost of housing to stratospheric levels, making it harder and harder for policemen, school teachers, fire fighters and assistant professors, not to mention administrative or service workers, to be able to afford to live in the valley.

Finally, consider the emerging political resistance that has coalesced against the spectre of globalization and international economic integration. The amalgam of left and right that has brought together environmentalists and dockworkers, French farmers and American steelworkers has highlighted a backlash against economic change. Anxiety and uncertainty are growing at the same time that more newcomers, from Ireland to Finland to Israel to Bangalore to Taiwan, prosper from the internationalization of production. In sum, economic change has been so rapid and so profound that few seem to understand its dynamics and shape, and much traditional social science is hard pressed to measure its scope and consequence.

The core claim of this chapter is that, behind the confusion and divergent trends of recent years, we can discern the outlines of a fundamental change in the way work is organized, structured, and governed. This transformation, I suggest, is sufficiently far-reaching that looking back from the 21st century to the end of the 20th, the struggles of the 1990s will be seen as a disruptive and costly

[3] Reported in Carolyn Lochhead, "Old World Discovers New Economy's Money," San Francisco Chronicle, December

period of adjustment to a new logic of organizing. Just as the shift to the era of the assembly line, vertical integration, and mass production brought with it a great transformation, so is the change to what today we inarticulately term as the "new economy" or decentralized capitalism.

This new logic of organizing involves changes in the standard recipes for jobs, organizations, and industries. Below I offer a description of the architecture of a world of work in which jobs disappear and projects ascend, and design and production become simultaneous processes rather than orderly sequential steps. The boundaries of many firms have become so porous that to focus on boundaries means only to see trees in a forest of interorganizational relations. The core competence of a firm, to use the new argot, is based on knowledge production and building a sustainable advantage that can be leveraged across products and services, thus enmeshing firms in all manner of different relationships and markets that were traditionally called industries. Power, to be sure, remains crucial, but it is employed to enhance reach and access and to compete in high-speed learning races. These new innovations are inherently fragile because they are premised on obtaining deeper engagement and participation from "core" employees and more collaboration and mutual involvement among ostensible competitors. But employees toil in a context of greater labor market volatility and inter-firm cooperation coexists with rivalry among competing networks.

To better appreciate the key features of this emergent model, we need to understand where it came from, the forces triggering and sustaining it, and its contrast with the dominant post-WWII model of organizing work. I begin, then, with an outline of the system of organizing that typified large U.S. firms for most of the second half of this century, followed by a brief consideration of the forces that caused the old system to fray and possibly crumble. I consider whether this is a one-time

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12, 1999, pp. A1, A23.

change, and consequently things will eventually settle down, or whether change and uncertainty have become ubiquitous, injected into nearly every aspect of corporate organization. I sketch the elements of a new form of organizing, and examine whether it is more suited to a world of change and tumult. I stress that this new logic is still nascent; we see its outlines in restructured mature firms, and its fuller operation in emergent industries that were never wedded to the older system, and in a growing institutional infrastructure of law, consulting, and venture capital firms that are potent carriers of these new recipes.

At the outset, I need to make several strong cautions. First, mine is neither a normative argument, nor a determinist one. The chapter is by no means a manifesto for the new system, nor an argument that it is inevitable. Politics always looms large in shaping the organization of work. But I do want to suggest that we spend too much time lamenting the demise of the old system, and insufficient effort talking and theorizing about new forms of organization, leaving to the sidelines discussions of much-needed accompanying social and political adjustments. In this country, we all too typically equate the public good with market outcomes, and considerations of justice, equality, and solidarity are silenced. These concerns are, however, extremely salient issues in a new era of decentralized capitalism. Finally, I resist the view that all advanced industrial countries are converging on common ways of organizing economic life. Instead, I argue that different forms of capitalism—each characterized by particular national ensembles of practices, institutions, and political cultures—have both distinctive advantages and liabilities. Rather than see hybrid amalgams of best practices forming, divergent national institutions will continue to result in different responses.

In addition, a comment about evidence and sources is in order. This chapter is written as a synthetic essay, in which I borrow freely from scholarly sources and journalistic accounts by

authors who are much more expert than I on particular topics. My aim is a broad, suggestive survey, not a definitive treatment or a thorough, bibliographically comprehensive essay. Thus one goal of the essay is to set an agenda for subsequent research; the other primary aim is to aid readers in seeing the organization of work in a different light. Mine is only one voice in an emerging chorus that includes the new growth theorists in economics, business scholars pursuing a knowledge-based theory of the firm, geographers who study regional agglomeration processes, and economic sociologists who analyze the role of networks in economic exchange. My own expertise stems from a decade of empirical research on the biotechnology and pharmaceutical industries. I emphasize that I do not believe the experiences of these research-intensive fields are generalizable to the entire economy. But recognize also that these global industries are exemplars of late 20th and early 21st century white-collar forms of knowledge-intensive work.

The "Old" System of Organizing Work

To understand the magnitude of the current transformation we need to recall the broad outlines of how work was structured in a "typical" large U.S. corporation throughout much of the post-war era, running from 1950 to around 1985. The most salient feature was a sharp division in responsibilities and rewards between management and labor. Managers did the "thinking"—making key decisions regarding long-range planning and the setting of short-term goals. Workers did the physical work necessary to execute management's decisions. The employment relationship was guided by standard objective criteria, most notably seniority, and merit or performance was rarely measured. Most workers and nearly all managers did not face serious risk of layoffs. Pay was also secure, with cost of living increases a routine part of union labor contracts. Pay was even more

secure for managers. In the auto industry, for example, MacDuffie (1996) notes that mid-level managers lived in a paternalistic culture that produced virtually automatic annual pay increases. Work was structured around the principles of scientific management, with each job specified with an explicit description and tasks clearly differentiated across jobs. Work was organized into departments, with each department corresponding to a key business function (e.g., production, sales, research and development, human resources, etc.). Most workers and managers spent their careers within a single functional area. Workers often entered a firm at entry-level, unskilled positions and over time worked their way up the blue-collar ladder, with some moving into supervisory and lower or even middle management. Managers were recruited out of college or business schools, joining the firm at the lower end of the management ladder, and working their way up the managerial ranks over the course of a career. There was steady growth in the numbers of managers too, reflecting both growth in organizational scale and the reliable maxim that managerial pay rises with the size of the unit reporting to a manager.[4] The overall picture of the firm was one of order, predictability, and hierarchy; in short, a well-coordinated machine with a fixed repertoire of routines.

During the 1940s, '50s, and part of the '60s, the bulk of a company's activities were carried out in a single industry. Moreover, firms often operated in stable markets, where the winds of competition were gentle. As firms grew, there was expansion into related products, but generally the identities of a firm and its industry were intermingled. There was also a clear separation between managers and shareholders, with the latter bearing the risks associated with business and the former responsible for smoothing out ups and downs in performance and reducing uncertainties.

[4] Gordon (1996) shows that over the post WWII period, U.S. firms have been much more managerially intensive than companies in other industrialized nations, attributing this fact to a need for greater control and more

In contrast to today, where business leaders are widely visible public figures, business news competes with politics and entertainment for the limelight, and business reporters are celebrities, this was a quiet world. Business leaders were not well known to the public at large. Stockholding in a large corporation was not a widespread phenomenon, nor was the daily performance of a firm on the stock market closely scrutinized.

With corporate growth and diversification, the organization of work became more complex, but the basic tenets of stability held fast. The rise of conglomerates and unrelated diversification turned some firms into large holding companies, in which finance became the lingua franca for comparing and uniting far-flung activities. Of course, the move into different products and markets was initially seen as anther way to insure steady performance and avoid short-term perturbations in particular markets. And even in those firms whose activities remained in related industries, the tightly organized bureaucracy was changing at the margins, with senior managers now possessing some cross-departmental experience and periodic task forces bringing together teams from different departments. In firms with a core technology that could be utilized for a range of different products, such as 3M or Corning, and in firms with expanding global operations, efforts were afoot to develop dual reporting relationships, and matrix-like structures became common. On the surface, these changes seemed gradual and evolutionary, the basic core strength of corporate bureaucracy was being amended, but certainly not graying or under challenge.

Several caveats are, naturally, in order. Clearly this is a broad brush portrait; the organization of work varied across industries and between unionized and non-unionized settings. And few small and medium-sized companies could either afford or have need for all of the elements sketched above. Moreover, this was a U.S. model, or perhaps an Anglo one, with certain

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intensive supervision. But this pattern is no doubt also related to the higher rate of college graduation in the U.S., and

broad similarities found in the U.K., Canada, and Australia as well. This system was also neither natural nor necessarily optimal. The social organization of work is molded by history, and evolves through bargaining and conflict. This form of organizing was very much embedded in a post-war, suburban, middle class culture. Moreover, this "Fordist" model grew in response to the demands of mass production for a continuous, reliable labor force, and as a reaction to labor strife, especially the growing pre-war political power of labor unions. The growth of internal labor markets and tightly-specified jobs replaced the earlier "drive" system, in which foremen ran production, often in a highly capricious manner, and effort was continually negotiated and turnover was high. The focus on well-defined jobs reflected both a desire for predictability and a labor-management truce in a post-war era that yearned for routine and regularity. The accommodation between labor and management, dubbed job control unionism, protected workers from management whim but relinquished worker control and autonomy.

The triumph of the large firm displaced other forms of enterprise, so that even though the majority of workers toiled in small and medium-sized organizations, the large corporation was the dominant force in business activity. Not only did large-scale corporate enterprise dominate other forms of enterprise, it influenced the larger culture of everyday life as well. The expectation of most employees of the large firm was that they would spend their life slogging away or climbing the ladder within a single firm. Seniority, security, and status were all tied to one's employer, and community life was inextricably shaped by the large firm as well.

In a relatively short period of time, little more than the ten year period from 1985 to 1995, this model of organizing work underwent considerable change. Just how much change is hard to say. At a minimum, a number of key features—job security, routine pay increases, narrowly

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fits as well with ethnographic accounts of the desire for managerial fiefdoms, see Kanter, 1977, or Jackall, 1988.

defined jobs, and considerable distance between managers' and shareholders' interests—have been eroded. What is unclear is whether the entire system is fragmenting, to be replaced by an altogether different model of organizing, or whether the current period of ferment will, at last, settle down and a reform model will emerge, pieced together out of remnants of existing practices and a partial set of new arrangements. Building entirely new models of organizing entails steep transition costs, and certainly many would point to the past decade as just such a period of tumult. But a decade is a relatively short period of time, and some skeptics note that while the bonds between employer and employee have been weakened, they have not been broken (Neumark, 2000). Still, I argue that the scope of the multi-level changes in the organization of work, firms and industries has been dramatic.

Causes and Consequences of the Reshaping of Work and Organization

There is considerable debate over what factors are responsible for the demise of the post WWII accommodation between management and labor, and much debate over the consequences of these changes. One explanation points to the large firm and argues that rampant corporate downsizing and restructuring along with an incessant drive for flexibility brought the system down. A second argument stresses global economic interdependence , highlighting lower wage foreign competition. A third account suggests there is a serious mismatch between the skills of older and less educated workers and the job requirements of a new information technology era. Running through each account is the suggestion of greater wage polarization, and the emergence of a "winner take all" ethic. Each argument captures some salient features of the past two decades, but each is also partial and incomplete, and in some respects inaccurate. The evidence is worth reviewing, however, because it aids us in seeing how a large systemic change is unfolding.

Downsizing and Restructuring. Unquestionably, one of the most dramatic changes of the past 15 years has been the willingness of large corporations to downsize, shedding themselves of thousands of formerly "safe" white-collar employees. Although downsizing was first regarded as a response to the economic downturn of the late 1980s, it continued throughout the 1990s even as the economy surged. And companies that had long histories of employment security joined the trend. For example, back in January of 1996, on the first business day of the new year, AT&T --a highly profitable company that was known for its job security, announced it would lay off 40,000 employees. The Vice President for Human Resources at AT&T, James Meadows, subsequently opined to the *New York Times* that:

> People need to look at themselves as self-employed, as vendors who come to this company to sell their skills. In AT&T, we have to promote the concept of the whole work force being contingent [i.e., on short-term contract, no promises] though most of our contingent workers are inside our walls. Jobs are being replaced by projects and fields of work, giving rise to a society that is increasingly "jobless but not workless" (*New York Times*, 2/13/96).

In tandem with the downsizing wave has been a rapid increase in various forms of contingent employment. Benner (1996) dubs temporary employees the shock absorbers of the flexible economy. Various forms of contingent employment have grown rapidly (Barker and Christensen, 1998; Carnoy, Castella, and Benner, 1997). The idea that workers should be employed only when there is immediate need for their services is hardly new, but clearly the use of this practice has grown considerably over the past decade. Just how rapidly is hottly contested and very much contingent on how one defines the employment practice. Does the term include part-time work, self-employment, contract work, home-based work, temporary help service employment, or a job without long term security? Regardless of definition, the expansion of such temporary

employment firms as Manpower Temporary Services, is ample proof to many observers that employees are increasingly regarded as another factor in the process of just-in-time production.

There is little doubt that downsizing has exerted a considerable toll on employees and communities. But just how potent a force is it and is the quest for flexibility the driving force behind organizational change? Despite the headlines, Gordon marshals data suggesting that the proportion of managers and supervisors in private nonfarm employment has not shrunk (Gordon, 1996: Chapter 2). Moreover, throughout the 1980s, he tells us, the proportion of managerial and administrative employment was more than three times as high in the U.S. as in Germany and Japan. U.S. management structures, many analysts claimed, were top-heavy, flabby, and redundant.

Osterman (1996) concurs with Gordon that managerial ranks are not shrinking rapidly in the U.S., but provides a more nuanced picture of changes in the terms of managers' employment. Middle-level managers are experiencing distress from restructuring, he argues. His analyses show a fairly dramatic decrease in rates of management retention, greater than that experienced by blue collar employees with comparable job tenure (Osterman 1996:9). In an excellent study of the insurance industry, Scott et al (1996) find a substantial flattening of the structure of firms. This "delayering" is accomplished by cutting several levels of middle to lower management, and greatly upgrading and expanding the role of claims adjusters through the use of expert systems and intensive monitoring. In a careful analysis of a nationwide survey of displaced workers, Farber (1996:33) documents that "older and more educated workers, while continuing to have lower rates of job loss than younger, have seen their rates of job loss increase more than those of other groups." Moreover, he finds that job loss due to position-abolished reasons, as opposed to layoffs or plant closings, has increased, largely among more educated workers. Thus the number of management jobs may not be declining, but job security clearly has lessened.

Similar complications abound concerning contingent employment, and much of the debate turns on what is meant by routine and nonstandard work, and whether labor market circumstances are voluntary or involuntary.[5] Standard work has long been thought to be continuous, secure, on a pre-set schedule, and full-time. In return for satisfactory performance and loyalty, the employer provided benefits and abided by government regulations of employment, in particular protection from hazardous conditions and unfair discrimination, and provided some array of benefits for retirement and health care. These benefits in turn are buttressed by government through social security and unemployment insurance. Nonstandard work, which was the most typical form of work probably until the middle of this century, comes in many guises, ranging from independent contractors (e.g., plumber, storefront lawyer, seamstress, or computer consultant) to part-time shift workers to temporary employees. All such arrangements purportedly involved weak attachment between a worker and a firm.

The basic analytical problem is whether such agreements are voluntary or involuntary, and whether weak attachment is an apt description. Clearly the labor force includes some people who do not choose to seek full-time jobs and others who would prefer them but can only find contingent work. Has the recent surge in downsizing increased the number of people with involuntary contingent work? The available evidence suggests yes, with women and minorities most likely to be rendered worse off by these new circumstances. (For excellent surveys of the issue and some of the

[5] Indeed, estimates of the size of the contingent workforce vary widely. In 1995, the Bureau of Labor Statistics reported that "contingent and alternative" employment represented 5% of the U.S, work force. The National Association of Part-Time and Temporary Employees, taking a very broad view and including full-time workers employed by temporary agencies and permanent part-time workers, estimates that 24% of the work force is contingent. (Reported in Elena Bianco, "Temporary Workers Gaining Market Share, Statistics Show," *Los Angeles Times*, December 31, 1996, p.A5.) And whatever the "correct" size of the contingent labor force, there has been another key change: many more workers now pass through temporary agencies on their way to permanent jobs.

best available evidence, see Carnoy, Castells, and Benner, 1997; and Kalleberg, Hudson, and Reskin, 2000).

We need to be careful, however, that we do not remain fixed on an image of a mythical workplace. Harriet Presser's (1995) work reminds us that the stylized model of the standard workday no longer holds: less than one third of employed Americans over age 18 worked the "traditional" Monday-Friday, 9-5 work week in 1991. Consider too that not all temporary work is low-wage. Indeed contingent employment now covers every position up to chief executive. Manpower Incorporated placed 750,000 people in temporary jobs in 1995; high technology was their fastest growing segment. The growth is fueled by a thirst for high-tech specialists whose wages range from $15-50 an hour and who work on short-term projects averaging 36 months. Moreover, what is more contingent—an employee who does the same job but over the course of several years sees considerable turnover in her coworkers and supervisors, or an independent contractor or temporary worker with a long-term stable clientele?

In a poignant series on "The Downsizing of America," The New York Times (March 3-9, 1996) emphasized the dislocation and sacrifice that has resulted from this profound remaking of employment. In a segment on the job losses accompanying the merger of Chase Manhattan and Chemical Bank, entitled "Farewell, Mother Chase," the reporters described a 35-year old bank employee who had previously spent several years as an itinerant pianist in New York.

> He never sought security in corporate work, and thus the merger doesn't especially throw him. He has embraced Chase's career assistance and thinks he has sharpened his abilities, become a resilient worker. His background has given him an emphatically 90s outlook on work. "I feel my job is to do the best that I possibly can, but my whole area could look totally different in five years through no fault of Chase. I can't imagine any corporate entity owes anyone a career. By virtue of his background, Matt Hoffman is perhaps the archetypal corporate man of the future. His introduction to the world of work was a terrain where his paycheck depended on how well he sold himself each day. Nothing was guaranteed past tomorrow.

> He has imported that mindset into banking and currently, into Chase, and he has found the fit to be all too perfect. For an odd reality of the new work environment is that the turbulent world of the freelance classical pianist is more like than unlike the world of the corporate employee. He, too, has to sell himself every day, and he, too, doesn't know if the gig will be there tomorrow. (New York Times, March 4, 1996).

The reporter conceptualizes this new form of employment as a game of musical chairs, an aberrant alternative to a steady, life-long job with clear career prospects. But perhaps the fact that working for a bank now resembles the challenges of "gigging" practiced by free-lance musicians is no longer aberrant; but represents a labor practice that is becoming the norm. Sociologists have long studied "craft-based work" in which workers labored on short-term projects and were paid for specific performances (Stinchcombe, 1959; Eccles. 1981; Faulkner and Anderson, 1987—see the review of this literature in Powell, 1990:306-9).[6] But we treated work in construction and the film industries as exceptions to a more "standard" organizational structure in which jobs and careers were tied to a single organization. Below I argue that the set of social arrangements we label a job are fast disappearing as work is being packaged in a different form and the conditions that gave rise to a career of repeated tasks for a single employer are disappearing.

For now, three observations seem salient. One, if jobs as a way of organizing work are no longer adaptive, then cutting jobs is not necessarily an effective response. Downsizing moves reduce head count and create turmoil, but seldom address the idea that work no longer needs to be organized into neat packages called jobs. Consequently, downsizing efforts fail to deliver on expectations, often leading to even further cuts, which in turn leave gaps in corporate memory, diminished reputation, and dissatisfied customers. The American Management Association's survey

[6] Recall the arguments made by Stinchcombe (1959) and Perrow (1967): When work involves products that are customized, the work process depends to a considerable degree on tacit knowledge and craft-based skills, and organizations in these fields eschew bureaucracy in favor of more flexible, short-term arrangements.

of downsized companies reports few productivity enhancements in the wake of cutbacks and a host of problems; a *Wall Street Journal* cover story dubbed the trend "dumb-sizing.").[7]

Two, in companies where rapid technological change is commonplace and tightly-defined job ladders are not viable, a project-based model for organizing work has evolved. These companies have the advantage of having never developed career structures and management systems that defined work as a steep vertical ladder, hence there are fewer transition costs to a new form of organizing. At Intel, the largest maker of microchips for computers, the corporate hierarchy is so flat there are few upper positions to vie for. A horizontal employment model makes sense in semiconductors where each new generation of microprocessors requires a different mix of skills. Intel invests more than $120 million a year on training, or nearly $3,000 per worker, with a goal to redeploy employees as fast as a new generation of chips. The expectation is that workers will redeploy themselves, finding new jobs within the company. But if they are successful, they are out of work.

Finally, by holding fast to the idea of work organized around well-defined jobs and lamenting the loss of job security, we neglect to evaluate the range of options necessary in a world in which the focus should be more on employability and less on preserving dead-end jobs. Access to universal health coverage, portable pension plans, and a form of unemployment benefits for independent contractors and contingent workers are much-needed steps in an environment where work is more likely to consist of short-term projects. A focus only on job preservation leaves workers alone to grapple with the risks of the new workplace. In the labor movement there are clear signs of recognition of these new circumstances. The Justice for Janitors campaigns in Silicon

[7] See "Fire and Forget?" *The Economist*, April 20, 1996, pp. 51-52 for discussion of AMA survey; see "Call It Dumbsizing: Why Some Companies Regret Cost-Cutting." *Wall Street Journal*, May 14, 1996, pp. Al, A8.

Valley reflect the development of new multi-employer collective bargaining strategies. Benner (1996) points to the Alliance of Motion Picture and Television Producers as one collective response to an industry based on flexible production, craft and technical work, and short-term contracts. The alliance takes on administrative functions formerly done by management and protects "members" income directly without necessarily protecting their jobs. Similar innovations are underway in the building and garment trades, where new efforts are underway to respond to the competitive success of the industry as a whole. In sum, we need more creative responses to the fluidity of project-based work, arrangements possibly like guilds for independent contractors that provide opportunities for professional community and learning, as well as financial security.

Globalization. In the minds of many people, global competition costs workers in advanced industrial nations their jobs, and contributes to financial uncertainty as capital flows freely around the globe. Citizens and politicians alike contend that foreign competition robs jobs at home. Corporations now locate their activities according to the logic of a global market. Moreover, fickle international financial markets have become the judge and jury of policymaking and central banks no longer have the capacity to intervene and stabilize currencies. But is global economic interdependence actually responsible for job loss, declining wages, and changes in the organization of work in the U.S.? The evidence is much less compelling than the heated rhetoric suggests.

The great bulk of our trade imbalance is with Japan (about 2/5 of the total trade deficit) and with Western Europe. In both cases, hourly wages in manufacturing are higher than ours, in Japan by 25% and in much of Europe by 10-15%.[8] The sharpest impact of import competition is in manufacturing, but there has not been a steep decline in wages in this sector. In his analysis of wage

[8] According to the U.S. Bureau of Labor Statistics, in 1994 dollars, manufacturing employees in the U.S. averaged $17.10 an hour, $27.31 in Germany, and $21.42 in Japan. The industrial nations with appreciably lower wages than the U.S. were Canada at $15.68 and the U.K. at $13.62 (reported in Gordon, 1996:29).

decline between 1979 and 1994, Gordon (1996:191) shows that production worker wages fell most rapidly in mining, construction, transportation, public utilities, and retail trade—none are sectors heavily exposed to competition from abroad. Indeed, immigration into the U.S. may be more responsible than global competition for wage stagnation in these sectors.

Viewed broadly, today's global economy is not even particularly new. Economic historians remind us that the half-century before World War I was roughly comparable in economic integration (J. Williamson 1995; 1996; O'Rourke, Taylor, and J. Williamson, 1996). Trade in goods and services is only slightly larger now, as a fraction of gross world product, than it was in 1914. Measured against GDP, U.S. imports are somewhat bigger now (11%) than they were in 1880 (8%). But labor mobility was probably higher in the late 19th century. Migrants left Europe for Australia and the U.S. in extraordinary numbers and investment from the "Old World" followed labor into the New. We also forget that a substantial foreign corporate presence in the U.S. is not novel either. In 1913, the U.S. pharmaceutical business was largely German-dominated, and Bayer aspirin the most common medicine of the day. On the other hand, there was scant manufacturing located in the less developed world, and product markets were not global in the pre-WWI period.

What is different today, dramatically so, is the speed with which massive amounts of information can be transmitted and received, making it possible to react to shifts in demand faster. And the content of much of what is traded internationally has high value. The fields most influenced by global competition—accounting, banking, computers, construction, consulting, legal services, semiconductors—are high wage industries. Thus, globalization does not appear to be the chief culprit for wage decline and job loss in the U.S. In a survey of the impact of globalization of

wages, labor economist Richard Freeman (1995:30) concluded that "we lack compelling evidence that trade underlies the problem of the less skilled."

Global economic interdependence is fundamental in an altogether novel respect however. The speed with which information and certain commodities move around the globe reshapes production in powerful ways. In pharmaceuticals, for example, new drugs were initially released in the U.S. and Western Europe, and after a five to even 10 year period of sales in the home market they were sold abroad in lesser developed countries at cost, while newer medicines were released at home. Now there is demand for new medical interventions from all corners of the globe. Similar product lifecycle stories, with different timelines, could be told for such diverse industries as autos, electronics, or movies. Today, development times are vastly speeded up for almost every product, but especially for these regarded as innovative or fashionable. Whether we are talking about a new CD, a cell phone or computer, or clothing, consumers in Mexico City, Munich, or Milwaukee want it at the same time. Sun Microsystems offers round-the-clock technical services at a single phone number, drawing on staffers around the globe who electronically hand work off as each shift comes on line. Such changes in demand press firms to recast their internal organization in a manner that stresses speed and learning. And when competition is based on ideas, the costs of creating additional copies of a conceptual product are low. The advantages of selling in many countries are considerable, provided the firm is first to market.

The traditional multinational firm's strengths were its wealth and concomitant influence and the economies of scale it reaped in global production. But high tariffs, transportation costs, and local politics often necessitated that a multinational firm set up redundant "full-service" operations in most of the countries in which they sold products. Thus the economies of production were greatly offset by costs of administration. In contrast, an emerging focus on faster product

development, combined with sensitivity to local tastes, rewards speed rather than sheer size. The model transnational firm today is no longer Coca-Cola, IBM or Royal Dutch Shell, but Asea Brown Boveri (ABB), the Swiss-Swedish energy and engineering firm, organized as a "constellation" with more than 65 business areas, 1,100 companies, and 4,500 profit centers, but coordinated by a corporate staff in Zurich of less than 200 (Taylor, 1991; Bartlett and Ghoshal, 1993).

In the U.S., General Electric has (d?)evolved to a radically decentralized organization with thousands of parts connected not by centralized control but by a passionate commitment to organizational learning. Rather than standardization, GE relies on relentless efforts at knowledge transfer, of moving successful organizational practices and processes across highly disparate units. The aim, then, is diversification and local experimentation, complemented by rapid diffusion of new ideas.[9] These radically decentralized corporations are remaking both the geography of production and the administration of large-scale organization.

But ABB or GE are not here, there, and everywhere at once. They do not shift operations from one site to another in search of lower labor costs as do smaller global firms such as Nike. The United Nations Conference on Trade and Development, which keeps a watchful eye on multinational firms, distinguishes between simple and complex integration.[10] The Nike strategy of chasing cheap labor and switching production exemplifies the simple strategy. In contrast, firms like ABB or GE, that pursue the complex strategy, must rethink all of the activities and strategies which multinationals have long pursued. In trying to be both global and local simultaneously, these firms find that region matters more than ever before. One, subsidiaries are no longer regarded as distant back offices, but may have responsibility for global functions or products. Thus if the

[9] Remarks of Steve Kerr, Chief Knowledge Officer, General Electric, at "fireside chat," Organization Science Winter Conference, Keystone, Colorado, Feb. 12, 2000.

[10] See the discussion in the extremely valuable survey on multinationals in *The Economist*, June 24, 1995.

Canadian subsidiary masters cost competitiveness best, it is given the reins of that program throughout a firm's global operations. Or if Hewlett Packard decides the office products market is most appealing in Europe, it relocates responsibility for that business unit in France and serves the U.S. from abroad. In turn, European firms like Glaxo, Thomson, and Unilever migrate to the U.S. and set up primary operations here. Far from being oblivious to locale and in search only of low-cost labor, most multinationals are reorganizing into complex internal networks that compete with one another.

Region looms large in several other respects as well. Many of the recognized centers of excellence around the world are found in industrial districts—the Prato region in northern Italy for fashion and design, Seattle for software, Japan for electronics miniaturization, Hollywood for filmmaking, to name only a few. Companies in these industries have no choice but to locate in or have access to these centers in order to stay abreast and access talent. Finally, most foreign investment still clusters around the home country—Western Europe moves into Eastern Europe, Japan into Southeast Asia, the U.S, into North and South America. And the huge growth in many service industries, such as health care, day care, financial services and the like, represent sectors that are not moveable. These fields must locate where the customers are.

In our research on the evolution of the global biotechnology industry, we have found that spatial agglomeration is critical in two respects. One, U.S. firms are located primarily in only a handful of regions – the Bay Area, San Diego, Seattle, the Research Triangle, Cambridge, and the suburbs of Washington, Baltimore, and Philadelphia. Spatial concentration is even more pronounced in Western Europe. In each case, the links between firms, research universities, prestigious research hospitals, and nonprofit research institutes are exceedingly important. Two, despite talk about the mobility of capital, the most critical source of financing – first stage venture

capital backing for startup companies, is local. We have found that over 40% of the venture capital funding for U.S. biotech companies in the late 1990s was between a venture firm and a biotech located within 25 miles of one another. Thus, location still matters a great deal.

Technological Change. Another common explanation for recent workplace changes is that technological innovations have failed to deliver dramatic increases in productivity, and instead replaced workers rather than enlarged their skills. In this respect, 1990 was a watershed year—one in which, according to the U.S. Department of Commerce, capital spending on the information economy (i.e, computers and telecommunications equipment) was greater than on all other aspects of the country's industrial infrastructure (Zuboff, 1995:202). By 1996, based on Commerce Department data, the information technology sector—defined as including computing and telecommunications but not semiconductors or electronic games—was the largest industry in the United States, employing 4.3 million people and generating 6.2% of the nation's output in 1996.[11] Has there been a related substitution of machines for hands and minds? Chrysler, for example, produced 1.72 million cars in 1995, the same number as in 1988, but with 7,000 fewer workers. Former Secretary of Labor Robert Reich frequently argued there is a mismatch between the skills Americans have and the skills the economy requires. Wages are falling for various categories of workers, so the argument goes, because they have become technologically obsolete. Obviously, computing capability once viewed as astounding is now trivial. My son's Nintendo 64 runs on a higher performance processor than the original 1976 Cray supercomputer, which was accessible back then only to an elite team of physicists. Surely, then, one answer to why organizations are restructuring is that there is a mismatch between worker skills and organizational needs.

[11] The study, "Cybernation: The Importance of the High-Technology Industry to the American Economy," was reported in Steve Lohr, "Information Technology Field Is Rated Largest U.S. Industry, *New York Times*, Nov. 18, 1997.

But not so fast. Hasn't the increase in computing power also allowed workers to produce more? Bound and Johnson (1995), two influential proponents of the skills mismatch view, recognize that evidence in favor of the argument that technology has rendered classes of workers obsolete is "largely circumstantial." Perhaps, then, the explanation is not a misfit in worker skills but a disconnect between organizational form and the new technologies. The canonical 20th century bureaucracy was designed to meet the business needs of increasing throughput and lowering unit costs. As Alfred Chandler (1962; 1977) has shown in his magisterial studies of the rise of first a functional hierarchy, then a multidivisional structure, the proliferation of mass production entailed a detailed division of labor and the simplification and delegation of administrative tasks. The role of a manager "evolved as guardian of the organization's centralized knowledge base" (Zuboff, 1995: 202). Dramatic gains in computing power were initially harnessed to reinforce hierarchical, centrally-controlled organizational structures—to watch, control, detect, and duplicate. Managers fought hard to hold onto the information on which their power rested, even as the new information technologies opened up novel possibilities for broad distribution of information. The organization of General Motors in the 1960s was a complicated analog of a mainframe computer. But, as I argue below, the economy today resembles a web, not a hierarchy, and to force technologies that enhance "networking" into a pyramidal form only serves to constrain their effectiveness. If there is a mismatch, then, I contend it is between the capabilities of information technology to handle information and problems whenever and wherever necessary and the older organizational arrangements that force decisions to be made by a central managerial hierarchy (see also C. Freeman, 1994; and Zuboff, 1995).

The co-evolutionary process by which technologies and institutions adapt to one another entails experimentation and learning, thus it takes time for fundamentally new technologies to be debugged, widely diffused, and become productive. Thus the long-expected gains in productivity from information technology do not flower until older, centralized organizational arrangements are abandoned and new ways of organizing are institutionalized, and new methods of measuring productivity, which capture gains in speed and innovation, are developed. Consider how slowly we are adjusting to a world in which companies low on physical but extraordinarily high on intellectual capital are in ascendance. We still measure the economy with indicators created for a mass production era. Intellectual assets do not appear anywhere on a balance sheet. The ability to generate new discoveries, to make dramatic improvements in design, service or customization are not easily measured. But we are moving to a regime in which how fast individuals and organizations learn may prove to be the only sustainable advantage. The evolution and spread of new information technologies that enhance collaborative work hold the possibility for remaking wirk practices in radical ways (Brynjolfsson et al, 1994). Achieving results from investments in intellectual capital, that is winning in a learning race, requires new organization arrangements that allow information to flow freely .

A "Winner Take All" System? There is considerable evidence of a growing disparity in income, in which people in the top one-fifth of the income distribution have grown much wealthier, while those in the lowest fifth have become poorer, and those in between have largely failed to keep pace with inflation.[12] Moreover, the real wages of many blue and pink collar workers did not

[12] The scholarly literature on growing earnings inequality is considerable, and debate over the causes is extensive. But the observation that wage inequality has widened by race, by level of education, and by industry has been well documented (see Levy and Murname, 1992; Danzinger and Gottschalk, 1993; 1995; Freeman and Katz, 1994; Harrison, 1994, Ch. 9; Tilly and Tilly, 1998, Ch. 10). Most recently, the Center on Budget and Policy Priorities, a Washington D.C.-based research group, released a state-by-state analysis, showing the gap between the rich and the

increase in tandem with the economy's resurgence in the 1990s. Thus to many, capitalism has grown both leaner and meaner, exacerbating social inequality. Wall Street investment banker Felix Rohatyn puts the case vividly, arguing that "advanced capitalism" and its harsh and cruel climate "imposes stringent discipline on its participants": "What is occurring is a huge transfer of wealth from lower skilled, middle-class American workers to the owners of capital assets and to a new technological aristocracy with a large element of compensation tied to stock values."[13]

Bennett Harrison (1994) is more direct, arguing that the global economy is increasingly dominated by large firms that have become skilled in "lean production," which utilize cross-border alliances and extensive networks of subcontracting to maximize their advantage. "Dressed in new costumes, and armed with new techniques for combining control over capital allocation, technology; government relations, and the deployment of labor with a dramatic decentralization of the location of actual production; the world's largest companies, their allies, and their suppliers have found a way to remain at the center of the world stage" (Harrison, 1994:12). Dubbing the process "concentration without centralization," Harrison argues that firms that have mastered global network production have four key components: 1) core-ring structures, typified by the auto industry's lean manufacturing process, in which there is a center of high-paid, high-skill employees and the rest of production is relegated to a lower-paid periphery; 2) new uses of computerized manufacturing and information management to coordinate far-flung activities according to principles of "just-in-time" production; 3) extensive use of subcontracting and strategic alliances, especially across national borders; and 4) attempts by management to elicit more active

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rest of the U.S. population has grown since the 1970s (reported in Richard Perez-Peña, "New York's Income Gap Largest in the Nation." *New York Times*, December 17, 1997). Spiers (1995) provides an illustrative account of the labor market in Albuquerque, illustrating the squeeze in the middle and the growth in jobs at the top and the bottom.

[13] In a speech entitled "Requiem for a Democrat", delivered at Wake Forest University, March 17, 1995, quoted in Head (1996:47).

collaboration on the part of their most expensive-to-replace employees. Harrison is deeply concerned that these principles of global network production exacerbate labor market inequality and free firms from oversight and regulation by national governments .

Critics of current practices agree that a new and more flexible mode of organizing has been adopted by many capitalist firms, but they maintain that this new form is a concerted effort to sharply differentiate workers and managers with different levels and types of skills. The much-vaunted lean production system, developed by Japanese automakers "dramatically lowers the amount of high wage effort needed to produce a product …, and it keeps reducing it through continuous incremental improvement" (Womack et al, 1990: 260). In a similar vein, Vallas and Beck's (1996) research on the introduction of programmable control systems and new process technologies in the paper-making industry shows that these innovations undercut the experience of established manual workers and contributed to the hegemony of well-educated engineers as production decisions came to be based on engineering criteria. More broadly, the massive upsurge in reengineering efforts places considerable power in the hands of those who control the relevant software and computer technologies that guide workplace reorganization.

Changes in the design of work, in tandem with growing reliance on outsourcing and contract manufacturing, have altered the landscape of work. Semi-skilled, decent-paying jobs in manufacturing and transportation have fallen sharply, and this decline has been especially devastating for low-skilled Afro-American men at the end of the employment queue (Bound and Freeman, 1992; Kasarda 1995; Wilson, 1996). Combined with the shrinkage in the size and clout of organized labor in manufacturing and the overall evaporation of job security, there has been an erosion in the kind of jobs for blue-collar workers that used to provide a steady, reliable income. Employees who have fallen from semi-skilled positions into low wage and/or temporary jobs find

not only that their incomes and benefits have dropped, but their work conditions as well. No longer is work predictable and routine but instead those who secure employment find themselves treated like yo-yos, yanked from part-time work to fulltime and back, from the day shift to the night shift.

But treating the labor supply like a spigot to be turned on and off as market conditions dictate is by no means unique to the United States. In West European nations, where the greater power of labor unions makes wholesale restructuring less of an option for employers, more and more manufacturing has moved to the model of the "breathing factory," in which work and hours expand to meet rising demand and contract when conditions slacken. The transformation of production to a system that responds much more rapidly to changes in markets is a global phenomenon. Why, then, is growing income polarization more pronounced in the United States?

The answer turns on a combination of political, institutional, and technological factors. The comparative weakness and decline in the U.S. labor movement vis-a-vis its relative strength in West European nations (and the broadly-diffused system of seniority-based wages in Japan) means that in those industries most affected by economic changes, managers in the U.S. dominate labor to an extent unprecedented in the latter half of the 20th century. Moreover, wage inequality is but one key component of overall inequality. The sparseness of the U.S. social safety net—unemployment, retraining, and welfare—and the more general reliance on the private sector rather than government for health care and pensions means that changes in the private sector exacerbate inequalities.

But there is a reverse side to the structural change that the U.S. is undergoing. The United States has been in the forefront of economies creating new jobs and making the shift in its industrial structure to a high-tech, knowledge-based economy. The very dynamism and flexibility that creates volatility and renders groups of workers less employable also fosters the development of new industries and new companies that spur job growth. And in many of these new fields, pay and other

benefits are tied directly to company performance, so successes result in even greater rewards. But the very success of the high-tech sector generates inequality, by widening the gap between winners and losers, by closing off opportunities to those experienced in the older system who are unable to make the transition, and by narrowing the points of entry for the unskilled.

The shift to the so-called "new economy" widens polarization in several other respects as well. There is, clearly, a dramatic difference between the extraordinary success of a relatively small number of employees at a firm like Microsoft, who are millionaires many times over from their gains on stock options, and the larger number of workers left with only low-wage options. Successes at Microsoft or throughout Silicon Valley contribute to a growing winner-take-all ethic (Frank and Cook, 1995), in which success creates increasing returns; that is, the capabilities, skills, and experiences of those who have prospered rebound such that they are vastly better positioned and qualified than those left behind. This reinforcing cycle is virtuous for the winners, vicious for the losers.

The transition to the new economy appears to exacerbate income inequality. Moreover, an added consequence of this transformation is that labor conflict has been altered. Rather than the traditional antagonisms of management and labor, new forms of production disperse conflict laterally: between full time and part-time workers, between insiders and outsiders, and between knowledge workers and the unskilled. But it is wrong, I believe, to argue that the new system is just a kind of decentralized Fordism or a wolf in sheep's clothing. We are undergoing a period of "creative destruction", in which the established practices of one regime are being replaced by new ones. Income polarization is a clear outcome of the turbulent transition from one system to another, but it is not at all clear that these inequalities are a necessary component of the new form. I have argued previously that the contradictory pulls of integration and disintegration, of collaboration and

cut-throat competition are built into the very nature of how network forms of organization grow and develop (Powell, 1990). How these combinational possibilities are realized depends largely on social and political relations and the trajectories inherent in particular technologies.

I turn now to a fuller analysis of this emergent system, beginning at the level of what used to be called a job, moving to the firm, and then industry level. My aim is not a detailed account of all the components, rather I want to stress how jobs are increasingly constituted as projects, firms as networks, and industries as capabilities, and sketch just how inter-connected these changes are.

A New Logic of Organizing

New systems of organizing production do not arrive on the scene whole cloth and announce their availability. The historian David Hounshell (1984) showed how the model of mass production emerged piecemeal in the U.S. in the latter half of the 19th century, beginning with the use of interchangeable parts in rifles made at the armories. Subsequently, the manufacture of sewing machines and then bicycles, and later meatpacking and beer brewing all played a critical role in the eventual development of the assembly line by Henry Ford. Similarly, what I term a new logic of network production has emerged incrementally, in fits and starts, but is now visible in a variety of guises.

We need a language to describe profound institutional change. The unraveling of the older system of bureaucratic employment in the large firm is now widely recognized, but how do we ascertain whether a new set of understandings about the nature of work and organization has emerged? In their superb study of the transformation of health care in the Bay Area, Scott, Reuf, Mendel, and Caronna (2000, ch. 6) identify a set of factors that are key components of institutional change. Scott et al (2000) stress the multidimensional nature of organizational change, noting that

governance structures, organizing logics, and the key actors involved shift in tandem with one another. They stress that institutional change is both multilevel and discontinuous, involves new mechanisms of governance, as well as new types of actors. Novel meanings are developed to account for behaviors and new relationships are forged among key participants. A core aspect of strategic management now involves leading and assessing the various probes that organizations are engaged, as they explore new technologies, new partners, and new markets (Eisenhardt and Brown, 1999). Consequently, the boundaries of organizations are redrawn and the status order of fields is remade. Measured against these metrics, it is possible to talk about a new logic of organization. The developments I discuss below are thoroughly multilevel in nature, involving a transformation in the ordering of work at the point of production, a profound change in the linkages among organizations, and a remaking of relations with competitors. These developments are discontinuous, I argue, because there is no clear stopping point in the process and no road back to the previous system. Performance is replacing seniority as the condition of employment. Learning and speed are replacing quantity as the metrics for evaluating organizations. These shifts bring new actors and identities and new business models to the fore, and push aside incumbents. Entrepreneurs, innovators, venture capitalists, IPOs, new products, new search engines, knowledge management, network managers, information technology officers and the like become the talk of the day.

More concretely, empirical research shows significant change in the boundaries of organizations, most notably in the area of research and development (R&D). A recent National Research Council analysis of trends in industrial R&D reports that the innovation process has undergone a significant transformation in the past decade, a change that is both "substantial" in magnitude and consequential to economic performance (Merrill and Cooper, 1999). The four

components of this reorienting of R&D are: 1.) A shift in the industries and sectors that dominate R&D towards new emerging technologies and nonmanufacturing industries; 2.) A change in the time horizons of R&D, with industry focusing more on shorter-term development and relying more on universities for basic research; 3.) A change in the organizational structure of R&D, with greater decentralization of research activities and increased reliance on both outsourcing and collaboration among firms, universities, and government laboratories; and 4.) Changes in the location of R&D, with successful research increasingly dependent on geographic proximity to clusters of related organizations. A companion National Research Council survey of eleven industries, purposefully diverse in character and technology but all resurgent in the 1990s, notes that common to each industry is: 1.) Increased reliance on such external sources of R&D as universities, consortia, and government laboratories; and 2.) Greater collaboration with domestic and foreign competitors, as well as customers, in the development of new products and processes (Mowery, 1999:7).

Thus I think it is possible to theorize about a new logic of organizing, the outlines of which we see in three key interrelated developments. One of my goals is to illuminate the connections among these three components and to flesh out how each contributes to an emerging "system".

From Jobs to Projects. For much of the last half of the 20th century we took the social arrangements that constituted work as a job largely for granted, forgetting the enormous effort and power it took to organize work into jobs. E.P. Thompson (1967) vividly illustrated the many struggles around the introduction of time clocks into the workplace. Hounshell (1984: 259) captured the dislocation wrought by the innovations of Henry Ford and his far-reaching mechanization of work in this quote from a letter to Ford written by the housewife of an assembly line worker:

> The chain system you have is a *slave driver! My God!*, Mr. Ford. My husband has come home and thrown himself down and won't eat his supper—so done

> out! Can't it be remedied? … That $5 day is a blessing—a bigger one than you know but *oh* they earn it.

Jobs emerged in the late 19th and early 20th centuries as a way to package work in settings where the same task was done repeatedly. But what we consider as work today is evolving in terms of how it is conducted, and it is changing into short-term projects often performed by teams. Consequently, the future organization of work is likely to be much less frequently honeycombed into a pattern of highly specified jobs. To be sure, jobs always represented rigid solutions to solving tasks. The ubiquitous phrase, "that's not my job," captures the reality that formal structures did not fit readily into a field of work. But in the post-war system, new opportunities and new statuses were typically treated as occasions to create more job categories. Efforts at job-rotation or cross training were responses to the proliferation of job categories, but such efforts were piecemeal when compared with emerging forms of work organization.

Work is more and more commonly organized around a team or work group charged with responsibility for a project. Sabel (1994) terms this process of joint exploration "learning by monitoring." The activities of work teams are coordinated by a process of iterated goal setting. General projects, such as the design of a new car, are initially determined by a thorough evaluation of both best practices and prospects for competing alternatives. Then broad plans are in turn successively decomposed into tasks for work groups. The goals are subsequently modified as groups gain experience in executing the required tasks. Through these revisions, changes in the parts lead to modifications in the conception of the whole, and vice-versa. The same procedure of monitoring decentralized learning, moreover, allows each party to observe the performance of the other collaborators closely enough to determine whether continued reliance on them, and dedication of resources to the joint projects, are warranted.

This form of production integrates conception and execution, with design and production running on parallel tracks. With concurrent design and development, participants constantly evaluate one another's work. If project groups decide who supplies their inputs, they need not choose the traditional internal unit but instead may turn to outside suppliers if they provide better value. This reconceptualization of work is designed to reduce and expose fixed costs, and make the expenses of all units dependent on their contribution, as well as fuse the knowledge housed in different parts of the organization.

In its most naked form, the new system approaches a form of pay for productivity, with little recourse to loyalty or seniority—in essence, a modern variant on the old putting-out system. In a cover story on the new labor concept, *Fortune* magazine described the changes bluntly:

> There will never be job security. You will be employed by us as long as you add value to the organization, and you are continuously responsible for finding ways to add value. In return, you have the right to demand interesting and important work, the freedom and resources to perform it well, pay that reflects your contribution, and the experience and training needed to be employable here or elsewhere (*Fortune*, "Cover Story: The New Deal." June 13, 1994: 44).

These new arrangements are deeply corrosive of the old system of sequential steps, linear design, and vertical integration that provided worker and manager alike with security. Hence workers are increasingly the authors of their own work. These new methods, designed for a world of rapid changes and product customization, utilize technologies to speed product development in a manner that greatly enhances the contribution of front-line technical workers. Employees forced to transfer their talent from project to project, however, also find they can move readily from employer to employer. In these new circumstances, managers constantly fret about the devolution of their control, worrying that project groups may pursue their own interests rather than those of top management. But, then, when the goals are shaped by success in pushing a technology frontier,

whose goals are the appropriate ones? Barley and Orr (1997) refer to work groups that specialize in technically skilled, project-based work as "communities of practice," recognizing the extent to which both work and organization structures are increasingly guided by initiative and skill, and signalling that loyalty to a professional community may be stronger than attachment to a firm. This broadened conception of knowledge and the locus of innovation remakes not only work but organizations as well.

Some commentators initially saw in the merging of conception and execution a renaissance of an earlier craft tradition of organizing work. But as Sabel (1994) points out, this imagery does not do justice to the continuous efforts at exploring new possibilities and the subsequent formalizing of these efforts so that they can be perfected and communicated to others. The combination of methods and tasks, that is, the use of benchmarking, various error-detection correcting systems, just-in-time inventory and very short product cycles involving intricate steps renders it impossible to rely on the older craft system of informal coordination of work. And it is precisely on this point that critics charge that the new system is really just hyper-Fordism, obscured behind participatory language, resulting in more intensive and stressful work. (Pollert, 1988; Kenney and Florida, 1993; Sayer and Walker, 1992.) Job intensification, these critics assert, does not constitute the remaking of work.

The various criticisms of the new system are on target in several key respects, discussed below, but they are wide of the mark in failing to see how autonomous many work teams are. In terms of the scope of their efforts and responsibilities, Sabel (1994) points out that some teams approximate the effective rights of independent firms. Teams can determine their own internal organization, communicate horizontally within the organization instead of up a hierarchy, and build close relationships with suppliers, sharing information rather than hoarding it. Teams choose,

within broad parameters, the necessary tools, services, and inputs needed to execute a task. Teams intensively monitor their own activities, thus in a key respect, they are self-managed. Critics, however, are right when they point out that often supervision, responsibility, and even discipline, is shifted from managers to peers, without any parallel increase in compensation or security. Thus in many situations, workers are asked to do much more without any increase in pay.

My aim is not to resolve whether this new flexibility is liberating or imprisoning; clearly elements of both are present, and which aspect is more potent depends on specific political and social conditions at the workplace. Instead, I want to highlight how sharply the conception of work has changed from a focus on narrow and specific tasks carried out by individuals, constrained by rules and procedures, to a collective effort conducted by teams with diverse skills, working with considerable autonomy, judged on results and outcomes. The hallmark of the old was the compartmentalization of jobs; the core features of the new are interdependence and involvement. A key consequence of the remaking of the division of labor is that important tasks no longer need be performed inside the boundaries of the organization. This change remakes not only the organization of work, but the work of organizations, too.

Flattening of Hierarchies. Spread of Networks. Just as the changed conception of work as organized around project teams transforms firms internally, growing involvement in an intricate latticework of collaborations with "outsiders" blurs the boundaries of the firm, making it difficult to know where the firm ends and the market or another firm begins. The former step redraws internal lines of authority, while the latter spreads the core activities of the firm across a much wider array of participants, with an attendant loss of centralized control. Astute observers of these developments, such as Richard Rosenbloom and William Spencer (1996), suggest that industrial

competition today resembles less a horse race and more a rugby match in which players frequently change uniforms.

Various forms of interorganizational collaboration have grown rapidly in recent years (Hergert and Morris, 1988; Hagedoorn, 1995; Gomes-Casseres, 1996; Doz and Hamel, 1998; Mowery and Nelson, 1999). So intensive are these partnering efforts that it may be more relevant to regard the interorganizational network as the basic unit of analysis. To be sure, collaboration does not dampen rivalry but instead shifts the playing field to sharp competition among rival networks with fluid membership. But changes inside the large corporation in the U.S., and Europe as well, go way beyond simple agreements to pursue research and development in new fields or to pursue joint ventures to tap new markets. The growth of alliances and partnerships entails novel forms of complex collaboration with suppliers, end-users, distributors, and even former competitors.

The motives for the upsurge in collaborations are varied. In one form, they are an effort to reshape the contours of production by relying more on subcontractors, substituting outside procurement for in-house production. The subcontractors work under short time frames, provide considerable variety of designs, spend more on R&D, and deliver higher quality, while the "lead" firm affords reciprocal access through data-sharing and security through longer-term relationships (Helper, 1993; Dyer, 1996a and b). There is no natural stopping point, however, in this chain of decisions to devolve centralized control. Thus fixing the boundaries of an organization becomes a nearly impossible task, as relationships with suppliers, subcontractors, and even competitors evolve in unexpected ways. As these network ties proliferate and deepen, it becomes more sensible to exercise voice rather than exit. A mutual orientation between parties may be established, based on knowledge that the parties assume each has about the other and upon which they draw in communication and problem solving. Fixed contracts are thus ineffectual, as expectations, rather

than being frozen, change as circumstances dictate. At the core, then, of this form of relational contracting are the "entangling strings" of reputation, friendship, and interdependence (Macneil, 1985).

A revolution in the organization of supply chains, such that Chrysler can be considered to have formed its own *keiretsu* (Dyer, 1996a), is only one facet of the changes underway. Equally strong are efforts to access diverse sources of technological knowledge. Simply put, companies have awakened to the idea that the best sources of ideas are not located internally. Access to relevant centers of knowledge is critical when knowledge is developing at a rapid pace. In attending to dispersed sources of knowledge, firms try to enhance their "absorptive capacity" (Cohen and Levinthal, 1989, 1990; Powell et al., 1996). A firm with a greater capacity to learn becomes more adept at both internal R&D and external R&D collaboration, thus enabling it to contribute more to a collaboration and learn more extensively from such participation.

Much sophisticated technical knowledge is tacit in character (Nelson and Winter, 1982) – an indissoluble mix of design, process, and expertise. Such information is not easily transferred by license or purchase. Moreover, passive recipients of new knowledge are less likely to fully appreciate its value or be able to respond rapidly. In our research on biotechnology, an industry rife with all manner of interorganizational collaborations, we have argued that learning is closely linked to the conditions under which knowledge is gained (Powell, 1996; Powell et al., 1996). Thus regardless of whether collaboration is driven by calculative motives, such as filling in missing pieces of the value chain, or by strategic considerations to gain access to new knowledge, network ties become admission tickets to high-velocity races. Connectivity to an inter-organizational network and competence at managing collaborations have become the drivers of the new logic of organizing.

We have shown that centrality in the biotech industry network enhances a firm's reputation and generates access to resources. Firms so positioned attract new employees, participate in more new ventures, and develop deeper experience at collaborating with other parties. Put colloquially, a firm grows by becoming a player; it does not become a player by growing. Growth and financial success result from centrality in industry networks (Powell, Koput, Smith-Doerr, 1996; Powell, Koput, Smith-Doerr, Owen-Smith, 1999). And once firms experience initial success, they typically restart the process by pursuing new avenues of collaborative R&D and deepening their ties to their partners. By developing more multiplex ties with individual partners, either through pursuing multiple collaborations or expanding an existing R&D partnership into clinical development or manufacturing, biotech firms increase the points of contact with their collaborators. When relationships are deepened, greater commitment and more thorough knowledge sharing follow. Organizations with both multiple and/or multifaceted ties to others typically develop better protocols for the exchange of information and the resolution of disputes (Powell, 1998).

This new knowledge-based conception of a firm (Brown and Duguid, 1998; Grant, 1996; Powell et al, 1996) views organization and networks as the vehicles for producing, synthesizing, and distributing ideas. The core task of both firms and networks is to access sources of knowledge rapidly and turn the "partial, situated insights of individuals and communities" into tangible products (Brown and Duguid, 1998). In tandem with this new model for organizing innovation, a dense, transactional infrastructure of lawyers, financiers, and venture capitalists has emerged to facilitate, monitor, and adjudicate network relationships. These professiona1-service firms have become the "Johnny Appleseeds" and marriage counselors for relational contracting. In law, these firms deal with intellectual property and dispute resolution more than litigation. In venture capital, investors provide money, counsel, and managerial experience to early-stage companies. They offer

information and advice, monitor performance, arrange connections, and lend enhanced credibility to small firms (Lerner, 1995; Gilson and Black, 1996; Gompers and Lerner, 1999).

Venture capitalists and financiers have become extremely savvy about valuing the worth of different network ties. Indeed, there is experimentation with altogether different financial conceptions of a firm. To wit, an established biotech company may spin off as a separate entity a promising research team in a newly emerging therapeutic area. Were this group to remain inside the existing firm, its steep R&D expenditures would cause the firm's financial picture to look bleak. But by setting the operation up as a separate legal entity, while retaining partial control, the new organization can compete for federal research grants, issue stock, attract new investors, and raise capital much as a start-up firm. The established firm is also buffered in terms of legal liability, as the new entity's assets are treated separately if any legal issues arise. In short, these subsidiary spin-offs are a network alternative to the multi-divisional firm, with attendant financial and legal advantages. And by holding the subsidiary's "feet to the fire," its activities are closely tied to both the relevant technical communities and the marketplace. The arms-length, relational tie means the new entity must succeed on its own, but with considerably more assistance than if it were a stand-alone operation.

Thus we see the growth of inter-firm networks driven by a variety of motives, and pursued by a diverse array of organizations. Large firms are relying on more nimble, smaller companies for key components or critical R&D. Large firms ally with other large firms to take on projects too risky or expensive for one firm to pursue alone. And clusters of small firms collaborate, cohering into a production network to create what no single small entity could on its own. In sum, firms are coming to resemble a network of treaties because these multi-stranded relationships encourage learning from a broad array of collaborators and promote experimentation with new methods, while

at the same time reducing the cost of expensive commitments. These developments do not mean that competition is rendered moot, instead we find that the success of firms is linked to the nature and depth of their ties to organizations in diverse fields.

Cross-fertilization Across Industries. At the industry level, one consequence of the blurring of organizational boundaries is increased effort to deploy competence with a key technology or skill across a range of fields. For example, Microsoft builds on its expertise with computer operating systems to sell software, consumer electronics, corporate-information systems, and news broadcasting. Honda employs its skill with power trains to build lawn mowers, motorcycles, and autos. While efforts to leverage skills across industries are hardly new, what is unusual are the evolving patterns of friend and foe: a competitor in one market is often a collaborator in another. As the rules of competition shift (Powell and Smith-Doerr, 1994: 385-91), customers become competitors and vice-versa. Thus one does not seek to vanquish the opponent, but to outrace him.

At times, the growing fertilization across industries seems all too trendy. The fascination of bankers with neural network models and genetic algorithms seems fanciful, and far-removed from the world of customer service, mortgages, and currency exchange. But consider the example of Silicon Graphics, ostensibly a company formed to develop computer-aided lasers, where Defense Department funding for the Star Wars project led to the special effects of the film "Jurassic Park." Contract work for Defense, NASA, and the CIA enabled Silicon Graphics to develop technology used in medicine to create virtual surgery for medical training purposes, as well as new "intelligent" designs for such manufacturers as Ford, GM, BMW, Volvo, and Boeing. One of the company's biggest successes has come in the entertainment field, with Nintendo, LucasArts, and Time-Warner, where cutting-edge knowledge has been employed to create vivid special effects for video games and movies. Certainly this was not the intended effect of Star Wars funding, but perhaps a former

movie star turned President would approve. The idea is simple—leverage distinctive capability across fields. The execution—compete and collaborate with a dazzling array of rivals and partners—is complex indeed. Beneath the interdependences, however, are a myriad of new and mixed motives—learning, positioning, supply, and distribution all bundled together in a process of collective competition. Again, my aim at this point is not to comment on whether these developments are harmful or positive for consumers or creators. We cannot address these questions adequately until we recognize how radically the units of analysis, the firm and the industry, have changed.

On the Scope of the Network Form: Towards Convergence or Diversity?

The argument as presented thus far has been largely adaptationist: new competitive pressures, along with changed economic conditions and emergent business ideologies have given rise to new forms of organizing. In our empirical work on interorganizational collaboration we have attempted to specify the conditions under which network arrangements arise, arguing that the more rapidly knowledge develops, and the more diverse its sources, the more firms will turn to relational contracting and collaboration (Powell et al, 1996). Such contingency-based arguments imply an unusually high freedom of choice however. I have argued that the origins and development of network forms of organizing seldom reveal a simple causal story (Powell, 1990). The immediate causes, to the extent that they can be discerned, reveal a wide variety of reasons for the proliferation of relational contracting practices. Strategic considerations—efforts to access critical resources or to obtain skills that cannot be produced internally—loom large. But so do concerns with cost minimization, speeding up work, and increasing productivity. And in a world of sharper competition, more vigilant investors, and enhanced efforts and ability to measure just about

everything, intensive search efforts are triggered to find ways to cut product development times. Given this constant experimentation, new ideas and new models are readily generated.

The reception and diffusion of these new models is a much more complex story, however. In some cases, the formation of networks anticipates the need for this particular form of exchange; in other situations, there is a slow pattern of development that ultimately justifies the form; and in still other circumstances, networks are a response to the demand for a mode of organizing that resolves exigencies that other forms are ill-equipped to handle. The evolutionary development of network practices is a complex and contingent process, one that is also tempered by adjustment to social and political conditions. To account for the diffusion of this new logic, I begin at the level of firms and industries, focusing largely on the United States. I offer an initial assessment of where the new logic of organizing has most firmly taken hold, discuss the difficulties that established organizations have in responding to new challenges and models, and analyze the role of carriers of management practice in the diffusion process. I then briefly mention several counter-trends that either delay or retard diffusion. I then turn to the nation-state, and discuss cross-national responses. The central questions ate clear: will each nation find its own accommodation to a new logic of organization, modifying alliance capitalism to its own institutional milieu? Or will some nations more rapidly embrace the new form, while others will resist at such efforts? Answers to these questions are much contested. I cannot resolve them here, instead I offer several propositions concerning which nations will be more or less receptive to new forms of organizing.

Diffusion Across Firms. There is wide variation across firms and industries on the three dimensions of change identified above. With respect to changes in the nature of jobs, Ostenman (1994) reports that many large corporations in the U.S. have altered their work practices, but just how deeply these changes go is a matter of contention (Applebaum and Batt, 1994). In a series of

studies of work practices in the mid-90s, Osterman (1999) finds evidence that a range of reforms, including forms of profit-sharing and greater employee involvement, have been adopted by high-performing firms. Similarly, most large firms are now increasingly reliant on subcontractors, strategic alliances, and joint ventures for one or more key business functions, but again the evolutionary consequences of these collaborative activities are not well understood. Firms also differ in their involvement in multiple industries based on the extent to which their key technologies or capabilities can be exploited in different domains. And on all these dimensions, separating cause and consequence is difficult.

But rather than look cross-sectionally across firms and industries, a better measure of the changes underway comes from a longitudinal view that examines changes over time in established organizations, the emergence of a new cohort of firms and industries, and the development and articulation of new ideas and models of business practice. Viewed in this fashion, the three sets of organizational changes are quite extensive. Consider what is now taught in business schools, recommended by the leading consultancies, and discussed by the business press. These carriers of management practices (Engwall, 1997) promote a new model of organizing today, one in which compensation is contingent upon performance and competitiveness is crucially dependent upon the development of core competencies and many basic organizational functions are either outsourced or done collaboratively with outsiders. The basic skeleton of a firm is different too, with a model of a flatter organization, with very different relations with employees, now ascendant.

To be sure, what is championed by business schools, the media, and consultants can represent a good deal of hype, only the latest fashions from the salons of business couture. But this criticism misses the extent to which a new set of ideas and skills have become part of both manager's and employee's tool kits. The skills and knowledge base of relational contracting and

project-based work are now part of this repertoire to an unprecedented degree. As those skills spread and become normatively sanctioned, built into a growing institutional infrastructure in universities, consulting firms, the financial community, and law and venture capital firms, a new model of organizing takes root. Consequently, current and future generations of managers are exposed to a very different set of ideas regarding what a firm should look like.

Simultaneously, as the economies of advanced industrial countries undergo a transition from a manufacturing to a service base, a new set of knowledge-based industries, in fields such as information technology, software, artificial intelligence, and biotechnology, become the leading-edge sites where these new ideas about organizing are developed, honed, and eventually transferred to other fields. These knowledge-based fields are either populated entirely by newly formed organizations, which are not tethered to older models of organizing, or by established firms undergoing significant to radical changes in their modus operandi.

For established firms, change entails considerable costs. The existing mode of organizing was at one time a recipe for success, so there is both resistance to new ways of doing things and greater difficulty in creating novel practices than in a new organization are built from scratch. As a result, skepticism, bargaining, persuading, and confusion are often the order of the day. To be sure, Ford Motor Company does not come to resemble Dell, or IBM become like Yahoo, or Eli Lilly like Genentech. Measured in those terms, the extent of change in large, established organizations is only piecemeal and incremental. But much more dramatic is the simple fact that the reference groups for large firms have changed fundamentally. In this respect, established firms now borrow "best practices" from a much broader set of organizations than they did two decades ago. Again, the repertoire of practices and models has shifted. Moreover, the growing reliance of established firms in all industries on outside parties for nearly every stage in the research, design, and production

process has become very strong. Indeed, the direction of change in established companies is as much external as internal. Recognizing that when products and competencies change, old skills may become obsolete, firms look externally for new capabilities and utilize outsiders for tasks that cannot be done effectively internally. The destructive part of this form of learning is the fact that many firms calculate that it takes too long to retrain and redeploy existing employees; it is cheaper and quicker to fire them, and hire new ones.

In an important respect, the disposing of employees rather than redeveloping them may represent a contrary trend. In earlier work I stressed the distinction between the "low road" of cheap labor, usage competition, and costcutting, and the "high road" of reconstituting work and skills without rendering the employees the victim (Powell, 1990). Outsourcing and subcontracting can represent a double-edged sword: on the one hand, a move toward draconian cost-cutting and sweating labor, on the other, a step toward relational contracting in which trust and joint problem-solving are key. In knowledge-intensive fields, we have argued that the latter strategy is essential because the quality of what you learn externally is crucially dependent upon your internal "absorptive capacity" (Powell et al, 1996). If a firm outsources only in search of cheaper costs, it loses the ability to assess the quality of the services it has procured. But knowledge-based industries are only a part, albeit highly a significant one, of the overall economy.

Variation Across Nations. Turning to cross-national comparisons, there are abundant reasons to expect that this new logic of organizing will diffuse globally, and equally compelling rationales for why national-level institutions have a resilient quality that both refracts common competitive pressures and produces divergent responses (see the essays in Berger and Dore, 1996, for both viewpoints). The world of industry does display considerable uniformity because it develops through global connections: finance moves from country to country, firms set up

operations in many lands, and consultants offer their counsel around the globe. Thus it is very hard to be immune to transnational developments. Yet there clearly are divergent national systems of production, or put differently, diverse models of capitalism. Recent political developments in France highlight these distinctions, with Prime Minister Jospin referring to "Anglo-Saxon" economics as "ultra-capitalism," and arguing that the French prefer security and equality to efficiency. But even as he speaks, French firms such as Renault and Parabis are undergoing extensive restructuring, and the chemical giant Rhone Poulenc's branch, Rhone Poulenc Rorer, is busy helping establish and bankroll a confederation among some thirty-odd, competing, small gene therapy firms in the U.S. in order to speed the advancement of this technology.

Still, there is abundant empirical evidence that national differences do matter. Research on the diffusion of lean production systems in autos finds important national-level differences in performance (Womack et al, 1990). Various studies of ostensibly successful companies in different nations making similar products with comparable technologies find that the organization of work is carried out in fundamentally different ways (Dore, 1973; Maurice et al, 1986; Jaikumar, 1986; Streeck, 1992), Moreover, taking a very broad view, the advanced industrial nations appear to have distinctive competencies in quite different fields: German firms excel at high-quality engineering, Japanese at electronics and miniaturization, Italian at fashion and design, British at advertising and publishing, the U.S. in software, biotechnology, and filmmaking.

These differences point to the importance of national systems of innovation (Porter, 1990; Lundvall, 1992; Nelson, 1993; Freeman, 1995). Such systems provide the broad institutional context for economic organization, building on the influence of national education systems, industrial relations policy, technical and scientific institutions, government policies, and cultural traditions. Posed very abstractly, these ensembles of institutional practices cohere in different ways.

Thus, as Boyer (1996) suggests, while global economic pressures may signal common problems and create an impetus for change, economic forces alone do not provide clear clues about the pathways of change or which policies should be altered and which solutions implemented.

To account for the responses of different national systems to growing international economic interdependence, we need to theorize about the diffusion process in a manner that accounts for both receptivity and resistance. Drawing on Whitley (1994), I offer a first approximation of the interaction of national-level factors and international influences. Consider, as a start, that the various industrial democracies vary markedly in terms of their degree of internal institutional cohesion and interdependence. Thus, the more tightly-integrated and cohesive are the dominant institutions of the home country, the more resistant that nation will be to forms of organizing that are regarded as foreign. Similarly, strong interdependencies among dominant political, financial, labor, and cultural institutions will deter the spread of non-national forms of organizing. Conversely, the likelihood of adopting new models of organizing is increased to the extent that international organizations (be they financial, political, legal, or cultural) dominate national institutions. Moreover, the degree to which national institutions are fragmented rather than interdependent will render a nation more likely to be susceptible to external models. Finally, as I stressed earlier, new and emergent industries are considerably less dependent on traditional forms of organizing. Consequently, the centrality of new industries to national economies will be a critical factor in determining the pace of adoption of new forms of organizing. Thus the speed of industrial change in Finland and Ireland may seem startling, but the dominance of new fields of wireless communication and software, respectively, usher in new business models while stimulating rapid growth.

In sum, explaining the diffusion of a new logic of organizing requires understanding how various national-level practices, e.g., the role of financial markets, labor-management relations, and university-industry linkages, mesh with factors in the international system. Since few nations possess an identical combination of institutional practices and cultural legacies, the diffusion of a new mode of organizing is likely to be uneven and partial throughout the industrial democracies. Rather than convergence, I suggest that we will see distinctive strengths and weaknesses as national elements either combine or fail to articulate with key elements of the new model. But such variety is likely to be useful over the long haul, as each national system may flourish or lag under different economic and political circumstances.

Summary and Conclusion

I have argued that a series of changes are well underway in how work is constituted, organizations are structured, and competition is conducted. These changes are responses to different pressures, and stem from experimentation with divergent ideas. But I contend they are converging to produce a distinctive and novel logic of organizing that is built around project-based work and team organization, flatter, more horizontal organizations that rely on long-term interdependent relations with external parties, and extensive efforts to leverage capabilities across a wide range of activities. One consequence is that the activities of many organizations are now more interdependent, and selection increasingly operates at the network level as rivalry shifts from firm versus firm to coalition versus collaboration. This system seems to combine the give and take of long-term relational contracting with a short-term focus on results and market discipline. The transition to this new system is rocky, and there are both considerable gains for the winners and steep losses for the losers. At present, it appears the flexibility of the new model is well suited to an

era of rapid technological change. Whether the new system will prove adaptive for the long haul, or as robust as the post-WWII system was for nearly four decades, is not clear. But what is apparent is how rapidly the social technology for organizing work has changed. Our shared understandings about how work and organization are to be carried out now involve very different recipes than existed previously.

We need, I suggest, to think much more deeply about the social and political consequences of this transformation. Richard Sennett (1998) has argued that there are considerable costs to individuals when attachment and loyalty are replaced by flexibility and constant change. Although he provides evidence mostly from older workers, he shows poignantly that connection to a larger purpose is hard to sustain in a world of projects and perpetual change. We need to ask who has been harmed the most by this transition, and what social policies might ease the burdens of the shift? What kinds of institutional supports—public, private, and civic—are needed to both cushion and sustain new forms of organizing? What actions might push more organizations to follow the high road of continuous learning rather than the low road of intensified and insecure work? A key transition is underway, and organizations have, in many respects, become much more productive and responsive. We now know a good deal about the organizational consequences of this transformation; but our understanding of its social ramifications is murky. This chapter is an effort to start these conversations by sketching the outline of the new system and arguing that our current thinking has not kept pace.

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