

“Computers in the Wild”: Guilds and Next-Generation Unionism in the Information Revolution*

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There’s a great deal of practical experience that is required to be a senior system administrator – not just being trained. You have to understand the idiosyncratic way that computers behave in the wild.

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INTRODUCTION

One of the aspects of the information revolution that has had negative implications for many workers is the erosion of the workplace as a basis for long-term security and collective solidarity. The dramatic pace of technological change, complex restructuring of firms, and continual competitive pressures for rapid innovation that are a central component of the information economy are contributing to fundamental transformations in work and employment. As part of this transformation, the trend towards the centralization of production in large enterprises that was the dominant feature of the industrial era is being superseded by production organized around smaller workplaces connected together in complex, constantly shifting networks operating at multiple spatial scales, from the local to the global. For many workers, one result is greater insecurity, as they increasingly have to update their skills, change jobs and even change careers more frequently. Some analysts have gone so far as to characterize the typical information age worker as a “free-floating individual, connected on-line to a variety of task-performing organizations, ever-competing for resources and personal support, and assuming limited responsibilities towards limited people for a limited time”.¹

In this context, industrial unions, which were the dominant form of worker collective organization throughout most of the twentieth century,

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1. Martin Carnoy *et al.*, *Sustainable Flexibility: A Prospective Study on Work, Family and Society in the Information Age* (Paris, 1997), p. 35.

have been declining, with unions now representing less than 10 per cent of the private sector workforce in the US. As “traditional” unions have declined, however, there has been a surprising (re)emergence of occupational communities – groups of workers who are linked more closely by their similar skills, social bonds, and labor market experiences than by their position in their employing organization. In many information technology occupations in particular, workers have been coming together to create occupation-based associations, frequently using a “guild” terminology with names like the System Administrators’ Guild, the HTML Writers’ Guild, and the Silicon Valley Web Guild. Once thought to be remnants of a pre-industrial social order all but wiped out by the development of mass production, new forms of guilds now seem to be re-emerging as workers come together to share knowledge, build contacts leading to their next jobs, and try to protect themselves from the insecurity and volatility of information-age labor markets.

Why are these occupational associations emerging now, and how are they organizing and trying to protect their members’ interests? What motivates these organizations frequently to adopt a “guild” terminology in their names and organizational activities? How effective are these organizations at protecting workers’ interests? Are they likely to become more prominent, and how can they become more effective in improving workers’ conditions?

This paper addresses these questions by analyzing the activities of various guilds and occupational associations in Silicon Valley in the 1990s, the region at the core of innovation in global information-technology industries and an important context for examining the role of labor in the information revolution more broadly. In discussing the activities of these organizations, this paper will argue that, while they provide some important benefits for certain technical workers in the region, these contemporary “guilds” are limited in important ways. Most importantly, these organizations lack the ability to exercise monopoly control over access to skilled labor, or to enforce restrictions on production standards in their industries. These monopoly powers were a critical component of the influence wielded by medieval guilds, but are nearly impossible to achieve in the contemporary economy, given the rapidly changing skill requirements associated with the technological change and volatility of the information economy. Nonetheless, these contemporary guilds have improved their members’ career opportunities, through improving skill development, facilitating access to new job opportunities, and organizing advocacy efforts. Thus, given that the factors that have given rise to these new occupational communities are unlikely to change, efforts to build collective action through occupational solidarity can be an important component of broader strategies aimed at building security for workers in the information economy.

This paper proceeds in the following way. The next section provides a brief review of the erosion of workplace stability in Silicon Valley, providing an important context for understanding the rise of occupation-based associations. The following section provides an empirical analysis of a range of guilds and occupational associations in Silicon Valley that grew quite rapidly in the 1990s, highlighting their activities in skill development, job networking, and political advocacy. This is followed by a discussion comparing these recent efforts with the medieval guilds that form an inspiration for their activities, while also comparing these structures with other forms of workers' collective action, particularly professional associations and new forms of occupational unionism. The final section analyzes the strengths and weaknesses of these contemporary guild-like forms of collective solidarity, and discusses the implications for broader strategies to improve workers' positions in the information economy.

LABOR FLEXIBILITY AND THE INFORMATION ECONOMY IN SILICON VALLEY

In the past thirty years, the economy has been dramatically restructured through a variety of processes, including most prominently the rapid development and diffusion of information technologies and rapid economic globalization, with dramatic implications for work, employment, and labor market dynamics.² Silicon Valley provides a useful context for examining these new trends in labor. Like studying work in the textile industry in England in the early 1800s in order to understand the first industrial revolution, or studying work in the auto industry in Detroit in the early 1900s in order to understand the second industrial revolution, studying work in Silicon Valley in the 1990s provides insights into ways the information revolution is transforming work globally. This is true for two fundamental reasons. First, Silicon Valley's very origins as an industrial region lie in information-technology industries, which have developed primarily in the last half-century. The relative newness of Silicon Valley's industrial structure, at least compared to older industrial regions, makes especially visible patterns of work and employment that are associated with the rise of information technology. Second, Silicon Valley is a global center of innovation and production in these information-technology industries, which are linked together in complex networks of production, customer and supplier relations. Product and process innovations are adopted in the region rapidly, allowing firms to develop

2. See Chris Benner, *Work in the New Economy: Flexible Labor Markets in Silicon Valley* (Oxford, 2002); Manuel Castells, *The Rise of the Network Society*, vol. 1 of *The Information Age* (London [etc.], 1996); Alan Burton-Jones, *Knowledge Capitalism: Business, Work, and Learning in the New Economy* (Oxford [etc.], 1999).

innovative management and human resource practices. These practices then often diffuse onto world markets and into other industries.

One of the prominent characteristics of labor markets in Silicon Valley is the relative lack of the workplace as a basis of long-term stability or solidarity for workers. Regional labor markets are characterized by rapidly changing skill requirements and volatile employment conditions. The Silicon Valley region has twice the national percentage of the workforce employed in temporary agencies, with up to 40 per cent of the region's workforce involved in nonstandard employment relationships.³ Rapid turnover has become the norm, even for people classified as having "permanent" employment.⁴ A recent random survey of workers in Silicon Valley, for example, found a median job tenure of just under thirty months, with only 46 per cent of respondents having had the same job for the previous three years, and 23 per cent reporting having had three or more different jobs in that time.⁵ Even for those staying in the same job, skill requirements change rapidly, resulting in high levels of uncertainty and insecurity.⁶

The volatility in the region's labor markets is fundamentally tied to the nature of competition in the high-tech industries. Competitive success for firms and industries in information-technology industries depends on constant innovation in both developing new products and services, and in improving production processes.⁷ As David Angel describes,

In an era of intensified global competition, it is the ability to anticipate and create new market opportunities, to develop new products ahead of competitors and to reconfigure production processes rapidly in response to changing production requirements that offers the best prospect for long-term profitability of firms and industries.⁸

3. Chris Benner, *Shock Absorbers in the Flexible Economy: The Rise of Contingent Employment in Silicon Valley* (San José, CA, 1996).

4. See Martin Carnoy *et al.*, "Labour Markets and Employment Practices in the Age of Flexibility: A Case Study of Silicon Valley", *International Labour Review*, 136 (1997), pp. 27–48; AnnaLee Saxenian, "Beyond Boundaries: Open Labor Markets and Learning in Silicon Valley", in Michael Arthur and Denise Rousseau (eds), *The Boundaryless Career: A New Employment Principle for a New Organizational Era* (Oxford, 1996), pp. 23–39.; Kathleen Gregory, "Signing-Up: The Culture and Careers of Silicon Valley Computer People", (unpublished Ph.D. dissertation, Northwestern University, Evanston, IL, 1984).

5. Manuel Pastor *et al.*, *Economic Opportunity in a Volatile Economy: Understanding the Role of Labor Market Intermediaries in Two Regions. Report to the Ford Foundation* (San José, CA, 2003).

6. Benner, *Work in the New Economy*.

7. Carl Shapiro *et al.*, *Information Rules: A Strategic Guide to the Network Economy* (Boston, MA, 1998).

8. David Angel, *Restructuring for Innovation: The Remaking of the US Semiconductor Industry* (New York, 1994), p. 4.

This drive for constant innovation leads to a continual cycle of creative destruction, with new products, firms, and even entire industries replacing existing products, firms, and industries, while surviving firms are forced to restructure their operations and products. Lay-offs in the midst of economic growth are not unusual, but, in fact, have been a common experience in Silicon Valley throughout its history.⁹ Indeed, flexible employment practices, with open labor markets and widespread circulation of skilled personnel among multiple firms, has been a key component in the long-term competitive success of firms and industries in the region.¹⁰

THE EMERGENCE OF SILICON VALLEY OCCUPATIONAL COMMUNITIES

In this context of rapid change and volatility, traditional unionization strategies which are rooted in workplace organizing have proved largely ineffective in protecting workers' livelihoods in information-technology industries.¹¹ In contrast, however, communities of technical workers in information-technology industries have become an important structure in regional labor markets and in many workers' lives. In the earlier days of the region's development, most of these social networks operated informally. Frequently social networks were built and sustained through a combination of informal and formal gatherings entirely outside firm boundaries. Various users groups and hobbyists' clubs brought people with similar interests and experiences together, while trade-association meetings and industry conferences provided a more formal organizational infrastructure supporting the development of these social networks.¹²

9. In 1998, for example, in the midst of an economic boom and a year in which total employment in Santa Clara County (the core of Silicon Valley) grew by over 3 per cent, many Silicon Valley firms were in the midst of laying off significant portions of their workforce due to restructuring. Prominent Silicon Valley firms that announced lay-offs included the following: Seagate (10,000; 10 per cent of their global workforce); Applied Materials (4,200; 30 per cent); Intel (3,000; 5 per cent); National Semiconductor (1,400; 10 per cent); Silicon Graphics (1,000; 10 per cent); Silicon Valley Group (900; 26 per cent); Lam Research (700; 15 per cent); Netscape (400; 12.5 per cent); Komag (480; 10 per cent); Cypress Semiconductor (100; less than 5 per cent); S3 (100; 15 per cent); Spectrian (200; 25 per cent); Read-rite (250; 10 per cent); Adaptec (250; 7 per cent); and VLSI (10 per cent). See Benner, *Work in the New Economy*. For a discussion of similar dynamics in the 1970s, see John Keller, "The Production Worker in Electronics: Industrialization and Labor Development in California's Santa Clara Valley", (unpublished Ph.D. dissertation, University of Michigan, Ann Arbor, MI, 1981).

10. AnnaLee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge, MA, 1994).

11. See Chris Benner, "Win the Lottery or Organize: Economic Restructuring and Union Organizing in Silicon Valley", *Berkeley Planning Journal*, 12 (1998), pp. 50–71; Karen Hossfeld, "Divisions of Labor, Divisions of Lives: Immigrant Women Workers in Silicon Valley", (unpublished Ph.D. dissertation, University of California, Santa Cruz, CA, 1988).

12. Saxenian, *Regional Advantage*, pp. 30–34.

Dense social networks among workers serve as pathways for information about jobs, changing technologies, and shifts in industry dynamics. As the region has grown larger and more complex, workers in the regional production complex have become more conscious of the importance of this informal information sharing for their career success. As a result, they have more deliberately tried to create the formal infrastructure to support these “networking” opportunities. Organizations of skilled workers have become an important collective basis for improving worker’s career paths, building stability and opportunity in the midst of uncertainty and change.

Frequently, these new occupation-based associations find inspiration for their activities in the activities of medieval guilds. Many information-technology workers view their occupation as a true craft, and see guilds as a model for promoting shared information, knowledge, and collective solidarity. Kynn Bartlett, Founder and then President of the HTML Writers Guild, put it this way:

The name “guild” was chosen in order to look back at the older, medieval-type guilds. What we liked from that model was the notion of sharing knowledge – that building web design was something of a craft – not purely artistic or purely technical. Both are necessary to make an effective web site. For many people it is not just a technical exercise, but a creative outlet, [they are] expressing themselves through the work they do. The term “guild” calls to mind a certain way in which [the organization] supports the industry, as a support mechanism for web designers. We are a network, a helping hand, an educational resource. If they need something, they come to the guild and they are asking their peers. [The term “guild”] keeps in mind the main purpose [...] sharing information to make everyone successful.¹³

Specific guilds and guild-like associations that emerged or grew strongly in the 1990s include the following.¹⁴

Systems Administrators’ Guild

The Systems Administrators’ Guild (SAGE) has its origins in a large trade association called USENIX, which was founded in 1975 to bring together engineers, scientists, technicians, and systems administrators. USENIX sponsors numerous national conferences a year on various topics related to information technology development, one of which is large installation (more than 100 computers) systems administration (LISA). These LISA conferences have been held annually since 1986, and typically draw over 2,000 people. During the 1991 LISA conference, a group of systems administrators from the Bay Area decided to form an organization devoted exclusively to systems administrators, which came to be known as

13. Interview conducted July 1999.

14. These initiatives are all described in more detail in Benner, *Work in the New Economy*.

BayLISA. They formed this users' group because they were looking for a forum for networking on a regular basis, to help them stay up on technical issues, and to provide each other with moral and practical support. The core of people who formed BayLISA was also critical in the formation the following year of the Systems Administrators' Guild (SAGE) as a national organization with local chapters. SAGE was organized in order to "advance the status of computer system administration as a profession overall". It was founded as a special-interest group within USENIX, but over time SAGE has come to increasingly dominate USENIX functions as well, with SAGE membership totaling nearly 5,000 in 1999, over 50 per cent of the total USENIX membership.¹⁵ BayLisa is now the Bay Area Chapter of SAGE, and is the largest single chapter.

Silicon Valley Web Guild

This organization was founded in 1996 and had grown to over 1,000 members by 2000. The organization has a strong presence of employers, not just of web-designers. Monthly meetings are held at different companies who co-sponsor the meeting, providing food and meeting space for free. Companies view this as good public relations and a potential marketing tool, while also providing good links to a network of workers in high demand. Part of the reason for the greater corporate involvement in the Web Guild is its relationship to the national Association of Internet Professionals, of which Silicon Valley Web Guild is the local chapter. The AIP nationally acts much like an industry lobby organization, and was not started by individual professionals, but by a company whose rapid growth was apparently strongly linked to the adult entertainment industry.¹⁶ Nonetheless, the AIP sees its mission as providing benefits and programs that allow both its individual and corporate members to compete better in today's industry, serving as the voice of Internet professionals and industry corporations before the public, press, and within the online community on issues shaping the future of the Internet.

15. Hal Pomeranz, SAGE Board Member, Interview, July 1999.

16. The company that was instrumental in founding the AIP is R.J. Gordon & Co., an electronic business services and e-commerce company based in Los Angeles, CA. R.J. Gordon & Co. is principally known for its subsidiary creditcards.com, a processor of credit-card transactions over telephone or the internet. R.J. Gordon grew rapidly with the growth of the World Wide Web – it was named to the *Inc.* magazine list of 500 fastest growing companies in the United State for five years in a row (1994–1998). Its revenue jumped from under \$5 million in 1994, to nearly \$20 million in 1995, with much of this initial growth due to the rapid expansion of the on-line adult entertainment industry. R.J. Gordon & Co. wanted to help create an association to improve their image and make the World Wide Web more legitimate, so they put \$1 million into the founding and creation of AIP (Hans Cathcart, Silicon Valley Web Guild Coordinator, Interview, May 1999).

HTML Writers' Guild

This organization was formed in 1994, and is probably the largest international organization of Web authors – it had over 123,000 members in more than 150 nations worldwide in April 2001, at the peak of the Internet boom. The leadership of the Guild is based in both southern California and in Florida, but the largest portion of the membership is in Silicon Valley. The organization was founded with the purpose of sharing information and knowledge, while increasing the visibility and prominence of web design as an occupation. The HWG has grown so rapidly in part because there are almost no barriers to entry into the guild. One-year trial memberships are free, and to retain membership requires simply receiving the minimum HWG correspondence: one general newsletter e-mail a month. Full membership costs \$40 a year, but in 1999, only 2,500 of the members were full members. Nonetheless, the HWG has developed a wide range of active e-mail lists, with topics ranging from basic and advanced techniques of HTML, to business practices, standards, and ethics in the industry. There are only three part-time staff who maintain the core functions of moderating the e-mail lists, managing finances and membership lists, and building the organization. Their extensive web page of resources is maintained largely by a group of volunteers.

Silicon Valley Webgrrls

This organization was founded in 1997 with the goal of providing a forum for women in or interested in new media and technology “to network, exchange job and business leads, form strategic alliances, mentor and teach, intern and learn the skills to help women success in an increasingly technical workplace and world”.¹⁷ At its peak, Silicon Valley Webgrrls had a membership of over 1,000, monthly meetings that drew over 200 people regularly, and had a vibrant on-line listserv.

Society for Technical Communication

The Silicon Valley Chapter of the Society for Technical Communication (STC), with over 2,000 members, was established in 1971. The core of its activity is “advancing the arts and sciences of technical communication”. Members include technical writers, editors, graphic artists, multimedia artists, Web and Intranet Page Designers, translators, technical illustrators, and others whose work involves making technical information understandable and available to those who need it. As in many of the Silicon

17. <http://www.webgrrls.com>.

Valley professional associations, members include employers and recruiters, as well as people working in the occupation.

Technical Writers' Trade Group

The Tech Writers' Trade Group was started in the mid-1980s, initially to develop a code of conduct for tech writers. This is an initiative of the National Writers' Union, and their membership is made of people in the same occupation as the Society for Technical Communication, but they advocate more explicitly for their members' interests, rather than focusing on technical communication more broadly. There are approximately 300 members of the Tech Writers' Trade Group in Silicon Valley. Key activities include a job hotline, training, and continued advocacy around legislative issues.

Graphic Artists' Guild

The Northern California Chapter of the Graphic Artists' Guild was formed in October 1995. Services to local members are primarily provided through the national offices. The Graphic Artists' Guild actually began in Detroit in 1967, when a group of illustrators in a local ad agency originated what they thought would be a typical strike to gain union recognition. The ad agency was able to break the strike by getting their artwork through mail order, and thus the members began to restructure the organization in more of a guild format, focusing on services to members that could be provided even in the absence of a collective bargaining agreement. For most of its history, GAG has been an independent union, but in 1999 it decided to affiliate with the United Auto Workers/AFL-CIO. Most of the activities of GAG are focused on a variety of services for members that help them improve their working conditions and career opportunities. The lack of a collective bargaining agreement means that essentially GAG has to convince its membership every year that being part of the organization is worth it, which helps ensure that the organization is responsive to the changing needs of its membership.

Working Partnerships Membership Agency

This is an initiative organized by the local AFL-CIO Central Labor Council. It is an effort to assist temporary clerical workers in the Valley, by linking a membership association with a nonprofit staffing services firm. Working Partnerships Membership Association is an association that brings temporary workers together for a variety of common interests, providing access to improved benefits, organizing advocacy efforts, such as a code of conduct for temporary agencies, and improving temporary

workers' access to state unemployment benefits. The staffing agency puts workers in jobs paying a living wage, and offers them greater access to benefits and skills training.

These examples are only a portion of the occupational associations that play an important role in regional labor markets. One effort to count guilds and similar occupational associations active in the Valley identified nearly thirty organizations with active regular local meetings, including associations for database developers, Linux operating systems programmers, multimedia programmers, and help-desk professionals.¹⁸

There are a number of labor-market conditions that are common to all of these occupations in which guilds and similar associations have been emerging:

- (1) They are all in occupations that require some significant level of technical skills. However, these skills are not company-specific, but are rooted in changing software, hardware and networking systems that are used across organizational contexts.
- (2) These occupations also require a significant level of practical work experience, not just formal training, in order to understand how these complex information systems actually operate in practice. Thus, in order to understand "computers in the wild", workers in these occupations need far more than formal, classroom-based technical knowledge. Instead, informal mentorships and apprenticeship opportunities are an important part of becoming proficient in the field.
- (3) The skills required to perform the work change rapidly over time, requiring high levels of ongoing learning
- (4) Employment conditions change rapidly over time, with workers being more connected with their occupation and trade, rather than a particular employer.

In order to address these conditions, these occupational associations have developed broadly similar activities to assist their members in their own career development and improve their position in the regional labor market. Specifically, their activities can be divided into three broad categories.

First, all these organizations spend significant amounts of time trying to improve their members' opportunities for finding employment in the regional labor market. Sometimes this is done through a formal job listing or placement service. Technical Writers' Trade Group, for instance, has a jobs hotline, while the Society for Technical Communication runs a formal web-based job board. The Working Partnerships initiative goes the farthest in this regard, actually operating a staffing services firm. More

18. Benner, *Work in the New Economy*.

frequently, however, these guilds try to strengthen their members' employment opportunities through more informal channels of social networking. Most associations have regular monthly meetings, in which a significant portion of time is devoted specifically to sharing job leads. Many employers and recruiters attend these meetings as well, attracted by a concentrated group of people in a particular skill or occupation. On-line e-mail listservs provide another important source of job leads. All of these efforts go far beyond simple job listings in classified advertisements or on-line job boards, such as *monster.com* or *hotjobs.com*. Instead of being anonymous job listings, the job matching activities are closely linked with the social networks within these occupational communities. This is important, since it means that workers are able to gain much more information not just about available jobs, but about the quality of particular job opportunities. This includes the quality of the company offering the jobs, the nature of management practices, opportunities for advancement, specific skills and experience required, and so on. Furthermore, frequently job seekers learn about job opportunities through other members of their guild/association who are currently working in the company doing the hiring. This provides job seekers with valuable personal references and makes them more likely to be hired.

The second major activity these associations are engaged in is helping their members to improve their skills. Again, sometimes this is done through formal channels, such as organized training programs. The HTML Writers' Guild, for example, offers a range of on-line courses in writing skills, web-page management, and various specific software programs. Similarly the Technical Writers' Trade Group provides training in technical writing and career development, to help people get into the field. More important than these formal training programs, however, is the informal sharing of skills and experience. In all of these technical occupations, skills requirements are either difficult to identify, change rapidly, or both. As in the quotation at the beginning of this paper about the need for practical skills in systems administration, many of these occupations require high levels of tacit knowledge and practical experience. Changing software and hardware technologies require workers continually to upgrade their skills, and employers rarely provide adequate levels of training for employers to keep up to speed. Many workers, especially in new media industries, must spend a significant portion of their time making sure their skills are up-to-date.¹⁹ These occupational communities help workers identify which skills are valued in the labor market, and helps identify ways of improving their skills. Even on a

19. Rosemary Batt *et al.*, *NetWorking: Work Patterns and Workforce Policies for the New Media Industries* (Washington DC, 2001).

day-to-day level, these occupational communities can play an important role in helping people learn on the job. Cross-firm communication, through phone calls, direct e-mails and e-mail listservs, provide an important resource for technical workers in problem-solving.²⁰

Finally, these guilds also play an important role in improving their memberships' negotiating positions in the labor market. Again, sometimes this is done in a formal manner. Working Partnerships, for example, developed a campaign to upgrade conditions of temporary workers in the region by promoting a code of conduct for temporary agencies. The Technical Writers' Trade Group engaged in a major lobbying campaign in the state capital to help preserve overtime pay for tech-writers who were threatened with losing their hourly status. Other associations engage in this activity in more informal ways, primarily by providing information to help their members advocate for themselves individually in the labor market. These associations may provide training in individual negotiating strategies, provide detailed salary information based on surveys of the profession, and ultimately try to empower workers through strengthening their information, knowledge, and skills in negotiating.

STRUCTURES OF WORKERS' COLLECTIVE ORGANIZATIONS

The initiatives described in the previous section are somewhat limited in their capacity to impact employment conditions. Despite providing some important career benefits for their members, their impact on employers' behavior, firm human resource practices, and even skill and training systems at the moment are quite limited. They do, however, represent some intriguing organizing efforts and their increasing prevalence raises interesting questions about whether they are likely to be strengthened in the future. Are these guild-like associations likely to become more prominent? Can they be more effective in improving workers' conditions? To help answer these questions, it is useful to compare these initiatives to other historical patterns of collective organization. Since these organizations so specifically appeal to an idyllic image of medieval guilds, I turn first to an examination of the historical sources of strength and influence of guilds. I then compare these with other forms of worker collective solidarity, particularly professional associations and new forms of occupational unionism, discussing how contemporary Silicon Valley-based guild initiatives compare with these other efforts.

20. See Chris Benner, "Learning Communities in a Learning Region: The Soft Infrastructure of Cross-Firm Learning Networks in Silicon Valley", *Environment & Planning A* (forthcoming); Julian Orr, *Talking About Machines: An Ethnography of a Modern Job* (Ithaca, NY, 1996).

Guilds

Guilds have been defined as social groups or institutions created by workers around their work, skill or craft.²¹ Most writers trace the beginning of guilds to early in the twelfth century in Europe, though there are antecedents in ancient Rome, and guilds have existed in many precapitalist economies, including in India, China, and Japan.²² Though highly varied in strength, structure, operations, and influence, guilds continued to have significant strength throughout Medieval Europe for at least four centuries. Their power and influence waned in the seventeenth century, and by the late eighteenth century had been outlawed in France and much of the rest of Europe.²³ Guilds are most frequently associated with the development of apprenticeships and control over workplaces employing skilled craftsmen, and it is this popular image that the guilds in Silicon Valley appeal to. The activities of medieval guilds, however, were not limited to skills training and work activities, but in fact combined juridical, political, religious, and social aspirations, along with their basic concerns around economic activity. It was only with the combination of the workplace and broader societal activities that there were able to monopolize the practice of certain professions in medieval towns.

It is important to note that the internal governance structure of most guilds was dominated not by skilled crafts workers, but instead by master craftsmen who were typically owners of their own shops and had strong ties with local public authorities. While journeymen were members of the guild, their influence was significantly less than that of master craftsmen. In many cases, in fact, journeymen organized their own independent associations to try to influence governance of the guilds themselves. Apprentices were essentially indentured workers – sometimes paid in cash, but often in kind in the form of food and lodging – providing essential labor services for masters in their workshops, with few opportunities to escape unpleasant working conditions. Thus, Malcolm Chase is more accurate when he says, “the medieval guild was primarily an employers’ organization, but with extensive responsibilities for what would now be termed vocational training and consumer protection”.²⁴

21. Elliott Krause, *Death of the Guilds: Professions, States, and the Advance of Capitalism, 1930 to the Present* (New Haven, CT, 1996), p. 2

22. See Steven Epstein, *Wage Labor & Guilds in Medieval Europe* (Chapel Hill, NC, 1991); Bo Gustafsson, “The Rise and Economic Behaviour of Medieval Craft Guilds”, in *idem* (ed.), *Power and Economic Institutions: Reinterpretations in Economic History* (Brookfield, VT, 1991), pp. 69–106.

23. Interestingly, they survived in Germany through the mid-nineteenth century, and the corporatist structure of contemporary German labor relations apparently owes a great deal to this strong guild survival. See Krause, *Death of the Guilds*.

24. Malcolm Chase, *Early Trade Unionism: Fraternity, Skill and the Politics of Labour* (Aldershot, 2000), p. 9.

It is still instructive to understand how medieval guilds were able to be so effective, surviving over four centuries in the midst of significant economic change. They essentially combined the “mystery” of their craftsmanship with the dynamics of a pressure group to create their monopoly power over their given craft in the region controlled by their particular town. Their source of influence was essentially rooted in four broad arenas.²⁵

- (1) Association: This included control over the process of who entered the craft and how they were to operate. There were rules about who might enter an apprenticeship, how an apprentice should be trained, the process of moving from apprentice to journeyman to master to craftsman, how the workplace would be controlled, how the product and skill would be monopolized and so on. The guild had the power to levy dues and assess fines for breaking the guild rules.
- (2) Workplace: Guild masters owned the means of production, which in this case were the tools and the workshop itself required to make the particular product. As a group, masters could limit production to a pace that all could maintain, and that would not debase the quality of the product. For one guild master to profit at the expense of another, by charging more or less for the product than the guild price, by hiring more employees than the guild maximum, or by upping productivity above guild standards, was in theory prohibited.
- (3) Market: Through the guild’s monopoly over the product made and the skill required to make the profit, guilds were also able to control heavily the market price of the goods they made. Prices were generally set at a level the guild thought was fair, though of course there is evidence that consumers frequently thought the price too high.
- (4) State: A critical component of the guilds’ ability to exercise power was in their strong relationship with the local state. The Guilds’ monopoly over a certain craft was only possible through the power invested in them by local authorities – typically at town level, though later in developing regional governments. To function, guilds generally aimed to obtain a written charter from the local power, which, in exchange for the payment of appropriate fees, gave them the right to regulate the particular craft. Loss of monopoly was the price for nonpayment of fees.

In each of these areas, it is clear that the power contemporary guilds wield is only a pale shadow of the power of their medieval namesakes. In terms of the power of association, contemporary guilds have little ability to control who enters their occupation and how they operate. The formal training and skills people need to enter these technical occupations comes from a wide variety of educational institutions and training programs that

25. Krause, *Death of the Guilds*.

are difficult to influence. On-the-job experience is developed through informal mentoring relationships and practical experience across multiple organizational contexts that would be extremely difficult to organize into a formal apprenticeship system. Furthermore, the rapid pace of technological change, and the associated rapid change in skill requirement, would make any single formal system nearly impossible to maintain, even were it to be created. Thus, gaining monopoly control over the supply of labor in this context is nearly impossible. Certainly workers in these associations do exercise some influence over labor market and workplace conditions. This is primarily through the positive benefits provided to members through improved skill development and employment opportunities, rather than through regulation of the workplace or the market for the goods and services they provide. The majority of contemporary guild members are not self-employed or independent contractors, instead being in traditional hourly or salaried positions, subject to the supervision of their employer. Admittedly there are some who are self-employed and thus may be said to “own the means of production” – the various pieces of software and hardware required to perform their work. Nonetheless, even in these situations, their work is only meaningful within the context of the broader network-production relationships that characterize the regional economy. In this broader production context, they have little influence over working conditions or the market for their products and services. This was painfully evident, for instance, for many technical workers in Silicon Valley, as the economic downturn in 2000 reduced wages dramatically for many skilled occupations. Furthermore, most of these associations have very weak ability to influence state regulation, which was a critical component of the power of medieval guilds. Lobbying efforts remain limited and weak and the few advocacy efforts that exist have had only a minimal impact.

In essence, these contemporary guilds are limited by the same economic conditions that undermined the power of traditional guilds – conditions associated with the rise of a large-scale, complex, capitalist society. This does not mean, however, that guilds can’t play an important role even in the context of a capitalist economic structure. Recent scholarship, for example, suggests that medieval guilds may have played an important role in actually building a large-scale capitalist economy. Prior to the 1990s, most scholars agreed with the standard analysis originally established by Adam Smith and Karl Marx among others, that guilds were inefficient institutions that hindered the development of more productive ways of organizing production. Their strict regulation over the process of producing craft goods was seen to stifle innovation. Furthermore, as industrial capitalism began to take hold, with the development of a more complex division of labor and larger employment in a concentrated setting, the ability of industrial producers to take advantage of economies of scale

and improve production systems eventually eroded the power that guilds had been able to exercise in the economy. In essence, guilds were seen as outdated social structures that hindered economic growth and prosperity by stifling innovation and constraining new production techniques.

More recent scholarship, however, has begun to question this view. Epstein,²⁶ for instance, argues that guilds played a critical role in ensuring the development and expansion of skills and thus were in fact critical in actually *creating* the conditions for capitalist expansion. He argues that guilds survived for so long because they played a critical economic role, sustaining interregional specialized labor markets, ensuring skills development for large portions of the workforce. It is estimated that in the sixteenth and seventeenth centuries in western Europe, roughly two-thirds to three-quarters of the male labor force had spent significant time in apprenticeship programs. Without the long time-period (most frequently five to seven years) of apprenticeships, Epstein argues, individual craftsmen were unlikely to invest significantly in training new artisans, who could relatively easily leave the training shop and set up as a direct competitor. Through apprenticeships, master craftsmen could reclaim their costs of training by requiring that the apprentice work for below-market wages for a period of time after gaining a set level of skills. Region-wide standards for skills and training programs were developed and transmitted relatively easily in these relatively small-scale labor markets with low rates of migration. Epstein also argues that guilds and associations of journeyman linked together in networks throughout western Europe also played a critical role in disseminating technological invention through the region. Rather than being inefficient organizations, he argues, guilds disappeared not through adaptive failure but because developing nation-states abolished them by decree, largely at the behest of large-scale producers who were constrained by the production and market regulations guilds had managed to get passed. The decline of craft production was as much about capitalists gaining control over labor processes and growing markets as it was about efficient production. Guilds, in fact, played an important role in ensuring skills development in a way that facilitated economic growth and dynamism.

For contemporary guilds in Silicon Valley, even though they don't have the monopoly power of medieval guilds, they have been able to play a significant role in improving the skills and knowledge development of their members. This role is important not just for the members of these guilds, but for employers in the region as well. Guilds play a critical role in ensuring the rapid diffusion of information through the regional labor market, and in the process contribute to the overall economic vibrancy of

26. S.R. Epstein, "Craft Guilds, Apprenticeship, and Technological Change in Preindustrial Europe", *Journal of Economic History*, 58 (1998), pp. 684–714.

the region.²⁷ Through their contribution to skills development and regional innovation, these guilds do have some potential ability to develop greater leverage within regional labor markets to improve conditions for their members. In evaluating the potential of this leverage, it is useful to compare these initiatives with the activities of professional associations, which are in fact the most direct descendent of medieval guilds. Classic professions – lawyers, doctors, professors, and to a lesser extent engineers – have employed many of the same strategies that guilds pursued in building their “guild-power” but clearly in the context of a growing capitalist economy. Examining trends in professional associations provides additional insights into the role contemporary guilds in Silicon Valley are playing in the economy.

Professional Associations

Professional associations arose in the late nineteenth and twentieth centuries, most prominently in a series of occupations – physicians, lawyers, engineers, administrators, and executives – that are widely recognized as having certain characteristics that distinguish them from other occupational categories, including: a claim to represent, to have a level of mastery over, and to practice a particular discipline, skill, vocation, or “calling”; advanced learning, usually represented by higher-education qualifications, showing an ability to learn and amass knowledge; high-level intellectual skills, showing an ability to grasp new events quickly and to respond effectively; independence and discretion within the working context, showing allegiance to an ethical framework and often to specific codes of practice which govern relationships between the profession, the professional, his/her clients and the wider society.²⁸

Even in these classic professions, however, these occupations did not attain professional status without a struggle. Instead, the social status and financial rewards that professionals enjoy were obtained through long periods of collective mobilization and the exercise of political power.²⁹ Typically, the ability to gain professional status involved the ability to control access to the occupation, requiring that new practitioners be licensed according to procedures and regulations determined by, or at least heavily influenced by, the leading professional association. Furthermore, especially for lawyers and doctors, this professional status is heavily dependent on the required certification being entrenched in law and

27. Benner, “Learning Communities in a Learning Region”.

28. Robin Middlehurst *et al.*, “Leading Professionals: Towards New Concepts of Professionalism”, in Jane Broadbent *et al* (eds), *The End of the Professions? The Restructuring of Professional Work* (London [etc.], 1997), pp. 50–68.

29. Magali Sarfatti Larson, *The Rise of Professionalism: A Sociological Analysis* (Berkeley, CA, 1977).

regulated by the state. Nonetheless, the status of these occupations continues to be shaped by a complex interplay of market dynamics and political struggles. This status is heavily contested, both within particular professions, and between competing occupations in the labor market.³⁰ Recent unionization efforts by members of the medical profession, concerned about threats to their independence and professional status, highlights the fact that there is no linear movement towards increased professionalization, and that occupational status depends critically on changing power dynamics in the labor market.³¹

Professional associations, however, are not limited to these classic professions but in fact have also emerged in a range of technical and craft occupations as well. Here, the struggle for improved social status and financial rewards is both more difficult to achieve and less stable once attained. Yet membership in associations in these “semi-professions” remains both an individual strategy for people to improve their career opportunities and a collective strategy to improve the status of the occupation as a whole. There are a range of factors that shape the extent to which different professional and technical occupations are able to gain improved social status, including: the nature of the knowledge and skills required to perform the work; the system for entering and practicing in the occupation (certification and licensing); and the nature of employment relations in the occupation. Though part of the social status of people in traditional professions is linked to the specialized knowledge they have, how access to that knowledge is socially organized is also critical. The truly high-status occupations are those which are able to organize themselves to limit the supply of skills and knowledge. Doctors, for example, monopolize not only their practice of medicine, but their licenses and the sale of medical drugs by legal prescriptions. If medical knowledge were not so strongly monopolized, the prestige and rewards of doctors would be much less. Thus, the formation of a monopolistic practitioner group has historically been a central component of occupations gaining professional status. These groups are able to determine the nature of knowledge required for the occupation, formally certify those who are fit to practice, and limit practice to those who have been appropriately certified. In semi-professions, however, it is much harder to create a truly monopolistic practitioner group and thus more difficult to raise the status of members of the occupation through this strategy. As a result,

30. See Charles Derber, *Professionals as Workers: Mental Labor in Advanced Capitalism* (Boston, MA, 1982); Charles Derber et al., *Power in the Highest Degree: Professionals and the Rise of a New Mandarin Order* (New York, 1990).

31. See David Riccardi, “LA County Doctors Vote Decisively to Unionize”, *Los Angeles Times* (29 May 1999), p. A1; Emily Yellin, “American Medical Association to Form a Physician’s Union: Some Doctors See Relief in Plan to AMA Union; Others Call Move an Inadequate Solution”, *New York Times* (25 May 1999), p. A18.

professional associations in these occupations tend to be more decentralized and democratic, placing less emphasis on the certification of their members and more emphasis on actively intervening in the labor market on behalf of their members.³²

Thus, contemporary guild initiatives in Silicon Valley can be thought of as efforts to organize professional associations in semi-professional occupations, but in information-technology-related occupations that have particular characteristics that shape their ability to increase their members' economic and social status, along with their power in the labor market. The power of these information-technology workers is rooted in their capacity to cope with rapidly changing technology and to deal with uncertainty – to tame the “computers in the wild”. This kind of power, however, is clearly less tangible than institutional bases in truly self-regulating professions, rooted in a monopolistic practitioner group. Information-technology workers derive considerable status from being associated with cutting-edge technological and economic change, but at the same time they are constantly being market-tested for the relevance of their skills, and the organizational problems they claim to be able to solve.³³ Ultimately, the ability of mid-level workers in information-technology industries to attain and retain their high status in the labor market requires dealing with rapid change. It requires the ability to stay on top of industry trends and changing skill demands, to find access to multiple employment opportunities when needed, and to build career mobility over time across multiple organizational contexts. Workers in these occupations solve these problems of maintaining the market relevance of their skills by taking advantage of networks of information exchange in communities of workers who share similar types of expertise. Groups of users become resources for each other in maintaining knowledge about skills that are in demand. As a result, the guilds and occupational associations that have emerged in these occupations tend to be more decentralized and democratic, placing less emphasis on the certification of their members and more emphasis on actively intervening in the labor market on behalf of their members. These associations rarely focus on licensing or certifying members, or otherwise restricting access to the occupation. Instead, they focus on networking, providing various services to their members, and helping their membership anticipate and capitalize on changing industry trends. To do this requires building closer ties with employers than traditional professional associations (in which

32. Randall Collins, “Changing Conceptions in the Sociology of the Professions”, in Rolf Torstendahl and Michael Burrage (eds), *The Formation of Professions: Knowledge, State and Strategy* (London, 1990), pp. 11–23.

33. Robin Fincham, “Introduction: Problems and Perspectives for the Organised Professions”, in *idem* (ed.), *New Relationships in the Organised Professions* (Aldershot, 1996), pp. 1–18.

members are often self-employed) and frequently providing placement services for their members.

These associations also recognize that their members are by-and-large in employment situations where they are being paid by an employer, rather than being self-employed. They thus also have various activities and services aimed at strengthening their members' ability to negotiate a strong contract for themselves. In so doing, they also begin to converge with important new directions in the labor movement and union organizing strategies, which have been increasingly focusing on occupationally based organizing. Examining the reasons for the growth and development of this new unionism also provides important insights into the potential of these guild efforts to become more effective.

CHANGING UNION STRUCTURES AND NEW UNIONISM

Unions obviously have a long history, while the dominant form of unionism has changed and their relative strength has ebbed and flowed over time. Prior to the 1920s, craft unions and less formal, community-based unions played the greatest role in representing workers' interests. Craft-based unions in many occupations were able to set standards of fair rates that their members individually demanded from their employers. Community-based unions, such as the Knights of Labor and the IWW, had a broad social-movement character, building on community solidarity to defend workers' interests across a broad spectrum of industries.³⁴ Since the 1930s, however, industrial unionism has become the dominant form of unionism in this country. This model emerged out of the organizing strategies of the Congress of Industrial Organizations in the 1920s and 1930s, and became embodied in labor legislation with the 1935 Wagner Act. Organizing in the core of the growing mass production enterprises, workers in the CIO argued the importance of representation on an industry-wide basis, with collective bargaining carried out between company leaders and leaders of appropriate unions. At the core of this strategy is organizing based on long-term stable employment with a single employer who largely controls the conditions of employment. Workers and their unions agreed in practice to negotiate primarily over issues of compensation and work practices, leaving to company management the larger, more strategic issues of corporate investment, technological development, and other issues of competitive concern in the market.

Collective bargaining in this model, especially as it became entrenched into labor law, is based on individual worksites or with single employers.

34. See David Montgomery, *The Fall of the House of Labor: The Workplace, the State, and American Labor Activism, 1865–1925* (Cambridge, [etc.], 1987); Charles Craver, *Can Unions Survive? The Rejuvenation of the American Labor Movement* (New York, 1993).

This structure of representation worked fairly well in large manufacturing industries, where a majority of workers were organized. Pattern bargaining amongst unionized firms, along with efforts of nonunion firms to match union compensation packages (partly in order to avoid unionization), meant that, in practice, workers were often represented similarly across whole industries. Stable markets in mass-production enterprises, and well-developed internal labor markets that existed in many firms, provided a solid support for union structures.

As the economy has changed, however, with more service-sector employment and higher levels of volatility, uncertainty, complex networking, and outsourcing production arrangements, representation that is based on a single work-site or single employer has proven increasingly inadequate for defending workers' interests. For workers who move frequently from employer to employer, or whose working conditions are not primarily determined by a single employer (such as temporary workers, and many workers in subcontracting relationships), there are few opportunities in the current industrial-relations system for adequate representation. As a result, unions now represent less than 10 per cent of the private-sector workforce.

In recent years, however, the union movement has been experimenting with a range of innovations that extend beyond bargaining over wages and working conditions in a single enterprise, to becoming involved in issues of labor supply, labor quality, placement, and career advancement. The initiatives include alliances with employers and community groups, as well as other unions. They can focus on strengthening internal career ladders, as well as creating new external career ladders within an industry and across industries, expanding labor involvement in job matching as well as the design and delivery of training.³⁵ In many ways, these initiatives are similar to the structure of unions in construction trades, where hiring halls and apprenticeship training programs have been common for many years. In industries where "project-based" employment is the norm, such as in the television and movie production industry, an active intermediary role for unions is accepted practice.³⁶ The fact that these initiatives are emerging in other industries, however, indicates the growing recognition amongst unions that standard industrial-model unionism is no longer adequate for

35. See Laura Dresser *et al.*, *Rebuilding Job Access and Career Advancement Systems in the New Economy*, Center on Wisconsin Strategy Briefing Paper (Madison, WI, 1997); Stephen Herzenberg *et al.*, *New Rules for a New Economy: Employment and Opportunity in Postindustrial America* (Ithaca, NY, 1998); Eric Parker *et al.*, "Building the High Road in Metro Areas: Sectoral Training and Employment Projects", in Lowell Turner, Harry Katz, and Richard Hurd (eds), *Rekindling the Movement: Labor's Quest for Relevance in the 21st Century* (Ithaca, NY, 2001), pp. 256–273.

36. Lois Gray *et al.*, *Under the Stars: Essays on Labor Relations in Arts and Entertainment* (Ithaca, NY, 1996).

addressing the labor market concerns of a wide range of the American workforce. This has led to increased interest in models of occupation-based associations as potential alternatives.

This trend is clearly evident in Silicon Valley. Of the guild-like initiatives described here, three of them are directly linked with unions: the Technical Writers' Trade group, the Graphic Artists' Guild, and the Working Partnerships Membership Association. All three initiatives are trying to build power for workers in the absence of collective bargaining, through a variety of methods. This new model of unionism involves more of a focus on career development through training, services, and advocacy efforts. The organizational cohesion is rooted in specific occupational communities, primarily rooted in the regional labor market. The Working Partnerships Membership Association is particularly significant in that it is trying to build a similar organizational model for a group of workers (temporary clerical workers) who lack many of the technical skills and occupational cohesion that holds together the other guilds and occupational associations. This initiative started in the last 1990s, and is still too young to evaluate fully, but it shows interesting promise.

It is clear that occupational associations are not nearly as powerful in their ability to impact employment conditions as traditional unions operating in the context of a collective bargaining agreement. Nonetheless, in the absence of such an agreement and in the context of volatile, rapidly changing labor market, such occupationally based associations can clearly be important support for workers. This is particularly true in occupations with significant technical skills, but as the case of Working Partnerships demonstrates, it may also be relevant for a significantly wider group of workers as well. Furthermore, if such occupational associations are linked with the broader union movement, creating alliances with the stronger unions operating in more traditional industries and in the public sector, their ability to significant impact employment conditions through advocacy efforts and political intervention would be greatly increased.

Most of the guild initiatives in Silicon Valley have no involvement with the formal union movement in the Valley. They have grown independently, focused primarily on the needs of their own membership, and not envisioning themselves as part of a broader labor movement. This is largely due, however, to their impression of unions as inflexible organizations limited to collective bargaining in the public sector and traditional industries. The significant gap between these guilds and the formal labor movement seems to be shrinking in recent years, as the local labor movement in Silicon Valley has provided prominent leaders in a string of non-traditional activities, ranging from advocating for universal children's health insurance, to improved transportation systems, to more accountable redevelopment initiatives. The AFL-CIO Central Labor Council has begun approaching a number of these guild initiatives to become associate

members of the council, and in the process trying to develop more effective advocacy efforts that can address the needs of the guild membership. While still in its infancy, such efforts do suggest that there may be significant room for strengthening guild efforts through building closer ties with the stronger union movement.

CONCLUSIONS: LESSONS FOR A COLLECTIVE REPRESENTATION IN THE NEW ECONOMY?

In comparing the activities of contemporary guilds in Silicon Valley with the experiences of medieval guilds, and with professional associations and new unionism, as a model of collective mobilizing, certain strengths and weaknesses become clear. The weaknesses are most readily apparent. Contemporary Silicon Valley guilds lack significant influence in the arenas of power that medieval guilds were able to exercise, including controlling labor supply and regulating the market for their products and services. Similarly, they lack the ability to create a monopolistic practitioners' groups, which is a critical basis of power for true professional associations. Likewise, without the protection of a collective bargaining agreement, as in a traditional union context, the power of these guilds to influence employer behavior and protect their wages and working conditions are severely limited.

Nonetheless, it is also clear that these guilds do have certain strengths that provide important benefits to their members. They help improve their members bargaining position vis-à-vis their employers, by providing advice and training in their individual negotiations, and by engaging in broad advocacy initiatives. They help their members improve their employment prospects, by improving access to new jobs and career opportunities. Perhaps most importantly, they provide an important learning infrastructure, helping their members increase their own skills and learning opportunities over time. In the environment of rapid change and volatility that characterizes the information-based economy of Silicon Valley, it is this ability to help their members deal with rapid change that is most critical. Furthermore, because employers gain from the improved skills of guild members, it is likely that these guilds and occupational associations will continue to be significant in the regional labor market and perhaps grow. The incremental, informal, and cross-firm character of the learning communities that these guilds help create are valuable and fill a role in the regional production complex that both formal training programs and worksite-based learning cannot fill.

This role in building strong learning communities also highlights the broader significance of these Silicon Valley case studies. The information revolution is resulting in a growing proportion of people in the United States working in occupations with characteristics similar to those in

which these Silicon Valley guilds have emerged. Whether referred to as “symbolic analysts”,³⁷ semi- and highly-autonomous workers,³⁸ or knowledge-workers,³⁹ an increasing number of people are working in jobs that require a combination of technical skills, practical work experience, and a significant amount of independent decision making. When this is combined with a high-degree of nonfirm specific knowledge, and volatile employment conditions, guilds can likely provide important assistance to a wide number of people.

If such guild initiatives are to play a more significant role in influencing labor market conditions, however, they cannot remain isolated in their small occupational niches. Having a broader impact on working conditions will require building broader alliances and engaging in more significant political advocacy efforts. To date, signs of such a broader perspective are minimal. Nonetheless, there do exist important convergences between these guild initiatives and the new occupation-based organizing efforts of the labor movement – convergences that are rooted in the changing structure of work and employment in the information economy. This suggests that guild-like structures are likely to continue to grow and potentially become an important component of a broader set of initiatives aimed at improving workers’ livelihoods.

37. Robert B. Reich, *The Work of Nations: Preparing Ourselves for 21st-Century Capitalism* (New York, 1991).

38. Herzenberg, *New Rules for a New Economy*.

39. Burton-Jones, *Knowledge Capitalism*.