Chapter 10 Labor Market Institutions and Restructuring in U.S. Deregulated Telecommunications Services

Rosemary Batt

1. Introduction

This chapter summarizes some of the recent literature concerning the changing nature of markets, technology, and employment relations in deregulated telecommunications services in the United States. It draws on arguments and evidence from a series of studies over the last five years, most of which were undertaken by researchers at Cornell, MIT, and Rutgers universities in the United States. The research focuses on the relationship between market deregulation and technology change on the one hand, and changing business strategy, organizational structure, union relations, and work organization on the other. This chapter focuses on the extent to which labor market institutions have influenced the content and outcomes of work restructuring. The central argument is that the weakness of industrial relations institutions in the U.S. context has meant that managerial prerogative has dominated the manner in which both market deregulation and corporate restructuring have occurred. Unions largely have participated in effects bargaining, and have successfully negotiated contracts that minimize the negative outcomes of restructuring for employees and provide significant opportunities for union institutional security. I begin by briefly summarizing the state of work organization and employment relations prior to deregulation, and then review changes in markets, union institutions, business strategy, and work organization under deregulation.[1]

1 The paper draws heavily on Keefe and Batt 1997, which particularly analyzes the course of deregulation and technology change, and their implications for work organization; Keefe and Boroff 1994, which analyzes post-divestiture collective bargaining outcomes; Batt and Strausser (1998), which examines de-unionization and labor market outcomes based on the current population survey (CPS); and Batt and Keefe 1999, which updates the analysis of changing industry structures with particular attention to customer segmentation strategies and labor market outcomes. Readers should consult original sources for elaboration of concepts and evidence presented here.

2. Pre-Divestiture Internal Labor Markets

Nineteen eighty-four usually is viewed as the dividing line between the old and new era of the U.S. telecommunications industry. Prior to that date, the AT&T Bell System was the regulated monopoly telecommunications provider. AT&T provided virtually all long distance domestic service, supplied 92 percent of local service, employed over 90% of the industry's 1.1 million workforce, and owned the world's largest telecommunications equipment manufacturer (Western Electric) and premier research laboratory (Bell Labs). In the 1984 court-ordered divestiture of AT&T, the long distance and equipment manufacturing businesses were allocated to AT&T, under deregulated market conditions. Local service was consolidated from 22 local companies into 7 regional Bell operating companies (RBOCs), which retained their monopoly status. The U.S. Congress passed legislation in 1996 to deregulate local markets, but actual local competition has been slow to materialize.

Historically, federal and state regulation was designed to ensure that the Bell system would provide universal telephone service at reasonable rates by realizing substantial economies of scale inherent in the telephone network. To do so, regulators set local and residential telephone rates below cost, and subsidized them by overcharging long distance and business service. Regulators also provided for a reasonable rate of return on necessary investments and for legitimate costs of operating the system. AT&T provided reliable voice transmission through a highly efficient and centralized operating system, with collectively-bargained contracts that established common human resource practices for virtually all 725,000 union-eligible employees across the system. A standardized national system of internal labor markets also covered managerial employees (Howard and Bray 1988; Batt 1996).

The Bell work system in 1980 had many of the features of "high performance work systems" currently advocated (Kochan and Osterman 1994). Despite the constraints imposed by bureaucracy, it offered quality service at relatively low cost through state-of-the-art technology for its time. Operator services were highly taylorized from an early date (see Kohl 1993), but business office (customer service) and network technician jobs were relatively highly skilled, semi-autonomous, and problem-solving in orientation.[2] Employees frequently knew

2 While operators declined from 47 percent of the workforce in 1950 to 16 percent in 1980, craft specialties rose from 24 to 44 percent, and business office, from 5 to 11 percent. To supervise these hard-to-monitor jobs, the managerial workforce grew from 13.5 percent of the Bell system in 1950 to 29.3 percent in 1980, a ratio of managers to workers of 1:2.4. Elimination of low skilled operator and clerical jobs led to a shift in workforce gender composition from roughly 70 percent female in 1946 to 52 percent in 1980 (Keefe and Batt 1997: 69; Keefe and Boroff 1994: 313).

their customers well, either as neighbors or through repeated transactions; customer satisfaction was high according to surveys. Most entry-level jobs required a high school education; entrance examinations and selection procedures were highly selective; and employees received high levels of company-paid formal training and retraining. The well-developed system of internal job ladders created on-going opportunities for advancement and lifetime security. Informal training supported continuous learning, as technologies and procedures regularly changed. The broadly defined job classifications provided considerable labor flexibility, and when coupled with job security, workers rarely resisted new technologies and productivity improvements. Job security was part of the social contract, and workers reciprocated with high levels of loyalty, commitment, and obedience (Keefe and Batt 1997).

3. Industry Structure and Technology

Despite almost two decades of attempts at deregulation in the United States, the industry structure in 2000 is highly centralized and dominated by former Bell companies, which continue to employ the majority of the industry's workforce. AT&T still accounts for over half of the long distance market and the regional Bells and GTE provide 90 percent of wireline local service. Despite the 1996 Telecommunications Act designed to deregulate local service, the Regional Bells continue to act as regulated monopolies. AT&T, the Regional Bells, and GTE supply 90 percent of wireless cellular service, although Personal Communications Services (digital wireless) offers more competition.

Moreover, mergers, acquisitions, and joint ventures accelerated in the 1990s. For example, seven regional Bells became five after the mergers of Pacific Bell and Southwestern Bell, and NYNEX and Bell Atlantic. SBC (Southwestern Bell) acquired Southern New England Telephone, a former Bell affiliate that was fully divested by AT&T in 1984. A merger between Bell Atlantic and GTE was approved in 1999. Through acquisitions, GTE has grown from a handful of rural telephone companies into the largest provider of local telephone access and a major competitor on the Internet. AT&T's acquisition of Teleport provided AT&T with immediate local access to many of the largest urban business customers, and transformed AT&T's position in competitive local access markets almost as dramatically as AT&T's earlier acquisition of McCaw Cellular, which overnight made AT&T the nation's largest wireless provider. Upstart WorldCom transformed itself into a major telecommunications powerhouse through mergers and acquisitions. It became the largest supplier in long distance leased data lines, acquired the second largest local competitive access carrier, Metro

Fiber Systems (MFS), and with the acquisition of MCI, dominates the Internet backbone with a 60% market share (see Keefe 1998).

Bringing competition to the U.S. telecommunications industry has been complicated by the presence of network externalities, scale economies, excess capacity, and technological uncertainty. Firms that operate network production processes are subject to economies of scale. They invest in costly communications networks which represent a substantial sunk fixed cost embedded in long-lived facilities with excess capacity. Once the network is constructed, the marginal cost of another type of communication is essentially zero. In addition, digitalization has dramatically transformed transmission capabilities, substantially increasing the amount and speed with which information is transmitted, reducing distortion, and allowing many more options (voice, video, data, imaging). Finally, digitalization places all transmission media in direct competition with each other (e.g., wireline, wireless, cable, Internet). In sum, the economics of the telecommunications industry as well as technological uncertainty have created incentives for companies to merge, form partnerships, and diversify across competing technologies. These factors coupled with the legacy of the Bell system help explain why the industry continues to be highly concentrated; this in turn, has important implications for business strategy and employment practices (Keefe and Batt 1997; Batt and Keefe 1999).

4. Union Institutions

Two unions represent workers in U.S. telecommunications: the Communications Workers of America (CWA) and the International Brotherhood of Electrical Workers (IBEW). Historically, CWA, by far the dominant union, was a highly-decentralized, company-dominated employee association. It became independent in the 1940s, and succeeded in establishing national bargaining for all members in 1974. Without the cost pressures of competitive markets, labor relations were historically cooperative; and the CWA was one of the first unions to embrace joint union-management quality of worklife (QWL) programs, beginning in 1980. With the breakup of the Bell system in 1984, collective bargaining was decentralized to local telephone companies, and then reconfigured into enterprise-level bargaining (with separate contracts for AT&T and each of the regional Bell companies) (Katz and Darbishire 1999; Darbishire 2000).

Despite the only partial deregulation of the industry between 1983 and 1996, union density fell significantly from 55.5 percent of the total workforce to 28.7 percent over the period. The rate of deunionization also accelerated; over two thirds of the decline occurred between 1990 and 1996. Overall, about half of the decline was due to the greater relative growth of managerial and professional job

titles, and about half was due to deunionization among union-eligible (non-managerial) workers. Among union-eligible workers, union membership fell from roughly 72 percent in 1983 to 46 percent in 1996. Deunionization among union-eligible workers was due to two forces. First, newer companies such as MCI. Sprint and Cable TV giants, such as TCI, fiercely fought union drives in their facilities. Second, former Bell companies redefined traditional bargaining unit titles as managerial and exempt from labor laws; and they created or acquired unregulated "enterprise units" to handle wireless and other activities.

Overall, union-management relations in the former Bell companies went from cooperative, prior to divestiture, to highly adversarial, after 1984, when most companies began cost-cutting and downsizing activities. Several strikes ensued. Labor relations varied by region, however, with more adversarial relations in the north and north-east of the United States (Clifton 1999), than in right-to-work states in the south and west where jointly-sponsored productivity partnerships continued until the early 1990s (Batt and Darbishire 1997). Despite evidence of good performance outcomes associated with jointly-sponsored innovations such as employee participation and teams (e.g. Batt 1999a, 1999b), most joint programs were abandoned by the early 1990s as reengineering and consolidation programs came to dominate company resources.

Despite decentralization and regional variation, the unions maintained a fairly strong de facto pattern of bargaining. Keefe and Boroff (1994) provide a full analysis of contracts with former Bell companies negotiated in 1986, 1989, and 1992; the analysis is updated to 1995 in Batt and Keefe (1999). In general, union strategies since divestiture have focused heavily on limiting the negative effects of corporate cost-cutting and downsizing efforts. On the one hand, the employers succeeded in large-scale employment reductions, the elimination of cost-of-living adjustments (COLAs), the introduction of cost-sharing in health insurance, and in some cases, the introduction of contingent pay, including profit-sharing, and commission pay for service and sales workers. The unionized workforce declined by 30 to 60 percent in the former Bell companies. On the other hand, the unions succeeded in negotiating wages that tracked the U.S. Cost of Living Index (CPI) (almost 3 percent annually), included generous severance packages and pension buyouts for surplused workers, and contained union institutional security clauses that limit anti-union employer activity and in some cases, provided for card-check recognition in organizing campaigns. The industry model for employment security and training was negotiated by NYNEX in 1994 (Clifton 1998a, 1998b, 1999).

5. Restructuring and Business Strategy

Among the former Bell companies, AT&T has set the model for restructuring – focusing heavily on marketing, technology investments, and diversification. Between 1984 and 1992, AT&T cut 60 percent of its unionized workforce and at least 30 percent of its managers. It restructured into market-driven business units targeting particular customer segments; invested heavily in digital transmission and switching systems; reengineered processes to enhance remote servicing and repair capabilities; and undertook mergers, partnerships, and alliances to diversify into cellular and cable markets. It did not pursue a strategy based on high involvement or high commitment human resource practices, or union-management cooperation, except in isolated instances. Managerial prerogative was largely unimpeded by union influence or constraints.

The regional Bell companies tended to imitate the AT&T strategy, but with some lag time and additional constraints, including state Public Utility Commissions (PUCs) and the role played by unions in influencing public opinion. Overall, the regional Bell companies reduced the workforce in their regulated businesses by 28 percent between 1984 and 1993. Most of these reductions occurred through attrition, or voluntary retirement programs. In anticipation of the 1996 National Telecommunications Act, however, regional Bell companies announced a reduction of another 100,000 in the regulated core, or roughly 20 percent of the workforce, to take place largely through forced reductions. Many of these proved unnecessary, however, for several reasons: competition in local services lagged, growth in the demand for local access lines was grossly underestimated (particularly, second lines for Internet access), the forecasted rapid transition to a fiber optic local access network proved to be wrong, and the general economic expansion of the U.S. economy continued through the 1990s(Keefe and Batt 1997).

With respect to customer strategies, all of the major players (former Bell companies, independents, and new entrants) are attempting to develop the most cost effective ways to provide customized packages of information services particularly to higher-end business and residential consumers. All players seek to compete on cost, quality, and customer service by taking advantage of network system economies and becoming single-source providers of all information services to these customers. To do so, they have adopted segmented marketing strategies that differentiate customers by value-added, ranging from high value-added corporate clients to various business segments, to differentiation among lower-value added residential consumers. Each is also investing billions of dollars in trying to differentiate their highly standardized network service offerings by building brand names.

Most major players have used advanced information systems and process re-engineering to support their market segmentation strategies while also reducing costs. Advanced information systems allow companies to consolidate operations into large remote service centers, each dedicated to particular clientele; process reengineering automates many service functions so that telephone service may be turned on remotely without the help of field technicians. Re-engineered information systems also allow remote diagnosis and repair of services. Overhead and direct labor costs fall while customer response time improves. After reengineering at GTE, for example, the percent of residential phone orders that are automatically established doubled, from 33% in the past to 61%. The most dramatic examples of consolidation occurred at AT&T and GTE – both of which faced an early challenge of creating standardized customer service and network organizations to serve national markets. By the early 1990s, for example, AT&T had consolidated hundreds of customer service bureaus into six national mega-centers and reduced the number of network operations centers to two. Similarly, GTE, consolidated 258 local worksites into 58 regionally-based service centers, and has built a single network operations center in Dallas (Batt and Keefe 1999).

In contrast to the past, customer service jobs in the U.S. telecommunications industry now are divided into those serving residential, small business, or large business customers. Job functions are usually further divided into sales and service, billing, collections, and repair services. The type of segment served is a strong determinant of the design of work and human resource practices. For example, in a recent empirical analysis based on a nationally-representative survey of customer service establishments, customer segment was a significant determinant of skill level, technology use, work design, and HR incentives such as training, pay, and promotion opportunities (Batt 2000). Outsourcing of telemarketing and operator services also has accelerated in the 1990s.

By far the largest proportion of the workforce in U.S. telecommunications serves the residential or retail market. A typical *residential* call center houses between 500 and 1,000 customer service representatives (CSRs) who handle 90-100 customers per day and have a call cycle time of about 3-5 minutes. CSRs complete transactions with customers on-line and are discouraged from interacting with fellow employees. As soon as one call ends, an automatic call distribution (ACD) system automatically sends another customer call to the "open" representative. Many of the interactions with customers are scripted by expert systems. The system software prompts selling opportunities. Residential CSR jobs are the most stressful ones in the industry – higher than the short cycle highly demanding telephone operator jobs – because of intense pressure to simultaneously sell, provide "quality" service, and turnover calls, all in the context of pervasive electronic monitoring. Electronic monitoring records both the content of customer-employee interaction and the time employees spend in each

type of work activity. Company-developed algorithms provide targets as to the amount of time allowable in each type of activity. Bell companies have adopted widespread use of policies to enforce 90 percent "adherence" to schedules. For example, if CSRs are late in taking their breaks because they are handling a customer call, often they must go to their supervisor to get special approval. In some residential service centers, CSRs must raise their hands and request supervisory permission to take a rest room break.

Call centers for *small business* representatives generally house 100 to 200 employees, and business representatives handle approximately 30 customers per day. Because their orders are somewhat complex, they cannot be handled on-line with the customer on hold. Rather, the business representative takes down the information, enters some of it into a computerized database, and spends considerable time off the telephone completing the order. The pace in small business centers tends to be fairly reasonable, and representatives freely consult with each other to solve non-routine problems or get advice on how to handle a customer.

For *large business and institutional accounts,* companies hire college-educated account executives who are supposed to provide "one-stop-shopping" to corporate clients. Compensation plans rely heavily on commission pay. They provide customized service through on-site and electronic exchanges and usually rely on additional support staff to handle the mechanics of order processing. The former internal career ladders in female-dominated jobs have been broken up somewhat: residential, small-business, and large business offices in the same company are often located in different cities; residential representatives may move to small business centers, but further advancement usually depends on getting a college degree and the demonstrated ability to sell.

For the technical workforce, network operations have simplified their occupational structure by moving toward single top craft occupations that are organized by functional activity, such as outside plant technician or central office technician. The single title concept, however, should not be confused with the concept of the fully cross-trained worker; virtually no technicians in U.S. telecommunications are fully cross-trained. While technicians carry the same title and pay, they do not perform the same work. New technologies and new organizational structures have given rise to new sub-specialties. The single title gives operations management the flexibility from each company's human resource bureaucracy to rapidly re-deploy the workforce according to changes in technology and in the demand for network services without testing, job posting or job bidding.

Technical work also follows the model where market segmentation leads to occupational stratification. The customers' location and equipment determine the technician and his or her level of training and compensation. For example,

technicians serving residential customers have relatively lower skills and pay, and are often covered under separate "two-tier" wage agreements or are non-union subcontractors. By contrast, large business customers are serviced by "enhanced crews" of highly trained top craft cable splicers and special services technicians who work on fiber optics, multiplexors, subscriber loop carrier systems (SLCS pronounced Slick) and other advanced loop electronics. Market segmentation now means that customers in residential markets can receive service from technicians who receive half the compensation of those serving business clients and are trained at a ratio of 3 weeks verses 3 to 5 years of combined school and on-the-job learning.

6. Labor Market Outcomes

Within the former U.S. Bell companies, on-going downsizing and organizational instability undermined the historic social contract of implicit employment security among Bell System employees. Workforce demoralization was severe, especially at AT&T (Keefe and Boroff 1994), but also in other companies; and it included managers as well as workers (Batt 1996). In the industry more generally, deregulation and de-unionization have been associated with the growth of wage inequality, especially after 1990 when it grew significantly. This has occurred through a decline in the real wages of non-union workers: by 14.4 percent among technical workers and 21.6 percent among clerical and sales workers. This figure underestimates the differences in total compensation, however, by failing to take into account the higher levels of non-wage benefits for union workers and the greater use of part-time and contingent workers among non-union employers (Batt and Strausser 1998; Batt and Keefe 1999).

Another source of rising wage inequality is the increasing dispersion within both the union and the non-union segments. Among unionized sales and clerical workers, the 90/10 wage ratio increased from 2.00 in 1983 to 2.43 in 1996; for the non-union group, it grew at a higher rate, from 3.30 to 4.25 over the same period. The story of the changing wage structure between union and non-union technical workers is quite different than for clerical and sales workers. For non-union workers, the 90/10 ratio remained unchanged (at 3.13) for the period. In the union segment, the opposite occurred: the 90/10 ratio increased 31.5 percent for union workers (from 1.71 to 2.25). The increased wage dispersion is equally attributable to a decline in the lower 10th percentile (during the 1980s) and an increase in wages in the upper 90th percentile (in the 1990s).

The increase in wage dispersion in the union segment has several sources. These include:

a) customer segmentation strategies (discussed above) designed to fragment job functions and link employee groups to market segments, raising wage dispersion across wage grades;
b) contingent and commission pay strategies (discussed above);
c) negotiated two-tier wage structures;
d) union strategies to negotiate pay raises primarily at the high end of any wage grade – for workers with 5 years seniority who traditionally comprise the bulk of the workforce.

In the 1990s, the companies misjudged the demand for new services, particularly the Internet, and downsized more than necessary. As a result, they have hired more new employees at entry level wages, which raises dispersion within wage grades.

In the non-union segment, it is also notable that for both occupational groups, non-union workers at the high end (90th percentile) experienced falling real wages: 11 percent among clerical and sales workers and 7 percent among technical workers. This finding runs contrary to the idea that the market demand for highly technical skills (whether in office computers or programming skills) would raise wage dispersion. That is, among non-union workers, the higher skilled workers found their wages falling despite the common perception that technical skills are in short supply.

7. Conclusions

In summary, recent research demonstrates that the partial deregulation of telecommunications service markets in the United States has led to profound changes in corporate structure, work organization, union density, and labor market outcomes in the fifteen years since the break-up of the Bell System. Union institutions have had relatively little influence over the course of restructuring, despite the prior existence of an industry-wide collective bargaining system and despite various attempts at labor-management pacts to jointly reorganize work. Rather, unions have negotiated successfully to minimize the negative effects of restructuring for displaced workers and for the survivor workforce. Union density, while still high compared to other U.S. industries, has fallen by almost half.

Business strategy, process reeengineering, and the availability of advanced information systems have been the primary drivers of change in work organization and employment relations. Companies have shifted their orientation from public service to strategic segmentation of markets. The prior system of national internal labor markets has been transformed into a much more fragmented structure. Core jobs in customer services and network operations have become

much more specialized, and within occupational variation has increased with respect to skills and training, use of technology, work design, and pay.

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