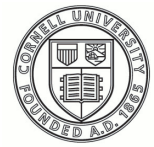

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Human Resource and Employment Practices in Telecommunications Services, 1980-1998

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Abstract

[Excerpt] In the academic literature on manufacturing, much research and debate have focused on whether firms are adopting some form of “high-performance” or “high-involvement” work organization based on such practices as employee participation, teams, and increased discretion, skills, and training for frontline workers (Ichniowski et al., 1996; Kochan and Osterman, 1994; MacDuffie, 1995). Whereas many firms in the telecommunications industry flirted with these ideas in the 1980s, they did not prove to be a lasting source of inspiration for the redesign of work and employment practices. Rather, work restructuring in telecommunications services has been driven by the ability of firms to leverage network and information technologies to reduce labor costs and create customer segmentation strategies. “Good jobs” versus “bad jobs,” or higher versus lower wage jobs, do not vary according to whether firms adopt a high- involvement model. They vary along two other dimensions: (1) within firms and occupations, by the value-added of the customer segment that an employee group serves; and (2) across firms, by union and nonunion status.

We believe that this customer segmentation strategy is becoming a more general model for employment practices in large-scale service | operations; telecommunications services firms may be somewhat more | advanced than other service firms in adopting this strategy because of certain unique industry characteristics. The scale economies of network technology are such that once a company builds the network infrastructure to a customer’s specifications, the cost of additional services is essentially zero. As a result, and notwithstanding technological uncertainty, all of the industry’s major players are attempting to take advantage of system economies inherent in the nature of the product market and technology to provide customized packages of multimedia products to identified market segments. They have organized into market-driven business units providing differentiated services to large businesses and institutions, small businesses, and residential customers. They have used information technologies and process reengineering to customize specific services to different segments according to customer needs and ability to pay. Variation in work and employment practices, or labor market segmentation, follows product market segmentation. As a result, much of the variation in employment practices in this industry is within firms and within occupations according to market segment rather than across firms.

In addition, despite market deregulation beginning in 1984 and opportunities for new entrants, a tightly led oligopoly structure is replacing the regulated Bell System monopoly. Former Bell System companies, the giants of the regulated period, continue to dominate market share in the post-1984 period. Older players and new entrants alike are merging and consolidating in order to have access to multimedia markets. What is striking in this industry, therefore, is the relative lack of variation in management and employment practices across firms after more than a decade of experience with deregulation. We attribute this lack of variation to three major sources. (1) Technological advances and network economics provide incentives for mergers, organizational consolidation, and, as indicated above, similar business strategies. (2) The former Bell System companies have deep institutional ties, and they continue to benchmark against and imitate each other so that ideas about restructuring have diffused quickly among them. (3) Despite overall deunionization in the industry, they continue to have high unionization rates; de facto pattern bargaining within the Bell system has remained quite strong. Therefore, similar employment practices based on inherited collective bargaining agreements continue to exist across former Bell System firms.

Keywords

telecommunications, human resources, employment practices, customer segmentation, technology

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Introduction

In the academic literature on manufacturing, much research and debate have focused on whether firms are adopting some form of "high-performance" or "high-involvement" work organization based on such practices as employee participation, teams, and increased discretion, skills, and training for frontline workers (Ichniowski et al., 1996; Kochan and Osterman, 1994; MacDuffie, 1995). Whereas many firms in the telecommunications industry flirted with these ideas in the 1980s, they did not prove to be a lasting source of inspiration for the redesign of work and employment practices. Rather, work restructuring in telecommunications services has been driven by the ability of firms to leverage network and information technologies to reduce labor costs and create customer segmentation strategies. "Good jobs" versus "bad jobs," or higher versus lower wage jobs, do not vary according to whether firms adopt a high-involvement model. They vary along two other dimensions: (1) within firms and occupations, by the value-added of the customer segment that an employee group serves; and (2) across firms, by union and nonunion status.

We believe that this customer segmentation strategy is becoming a more general model for employment practices in large-scale service | operations; telecommunications services firms may be somewhat more | advanced than other service firms in adopting this strategy because of certain unique industry characteristics. The scale economies of network technology are such that once a company builds the network infrastructure to a customer's specifications, the cost of additional services is essentially zero. As a result, and notwithstanding technological uncertainty, all of the industry's major players are attempting to take advantage of system economies inherent in the nature of the product market and technology to provide customized packages of multimedia products to identified market segments. They have organized into market-driven business units providing differentiated services to large businesses and institutions, small businesses, and residential customers. They have used information technologies and process reengineering to customize specific services to different segments according to customer needs and ability to pay. Variation in work and employment practices, or labor market segmentation, follows product market segmentation. As a result, much of the variation in employment practices in this industry is within firms and within occupations according to market segment rather than across firms.

In addition, despite market deregulation beginning in 1984 and opportunities for new entrants, a tightly led oligopoly structure is replacing the regulated Bell System monopoly. Former Bell System companies, the giants of the regulated period, continue to dominate market share in the post-1984 period. Older players and new entrants alike are merging and consolidating in order to have access to multimedia markets. What is striking in this industry, therefore, is

the relative lack of variation in management and employment practices across firms after more than a decade of experience with deregulation. We attribute this lack of variation to three major sources. (1) Technological advances and network economics provide incentives for mergers, organizational consolidation, and, as indicated above, similar business strategies. (2) The former Bell System companies have deep institutional ties, and they continue to benchmark against and imitate each other so that ideas about restructuring have diffused quickly among them. (3) Despite overall deunionization in the industry, they continue to have high unionization rates; de facto pattern bargaining within the Bell system has remained quite strong. Therefore, similar employment practices based on inherited collective bargaining agreements continue to exist across former Bell System firms.

There is significant variation across firms, however, based on union and nonunion status. Here, despite downward cost pressures on union standards and the growth of some contingent employment practices in the unionized core, the differences between union and nonunion firms have increased, particularly with respect to compensation practices. To a lesser extent, there is also variation in labor-management relations within the unionized segment.

The remainder of the chapter is divided into five sections. The next section (Section 2) briefly describes the legacy of the Bell System, which is important for understanding the inherited characteristics of the industry that continue to shape current employment practices. Section 3 describes the changes in technology and the problem of network economics that are affecting industry structure and strategy under deregulation; it also provides a powerful explanation of why we see quite similar practices across firms. Section 4 describes current business strategies. The last two sections analyze variation in employment practices within firms (Section 5) and across firms (Section 6). Conclusions follow.

The Legacy of the Bell System

As deregulation began in the early 1980s, the industry was dominated by the regulated Bell System monopoly. The Bell System provided virtually all long distance service to the U.S. population, supplied 92% of local service, and accounted for over 90% of the industry's 1.1 million employees. AT&T also owned the world's largest telecommunications equipment manufacturer, Western Electric, with 175,000 employees, and the premier research laboratory, Bell Labs, with 21,000 employees. The remaining work force was based in hundreds of small independent companies in small towns and rural America. Under the court-ordered divestiture of AT&T, Judge Green promoted competition in long distance and equipment markets, but not local service markets. He allocated the long distance and equipment manufacturing businesses to AT&T; he reorganized the 22 local Bell companies into seven regional Bell operating companies (RBOC), which continued to provide local service under monopoly conditions (Temin, 1987).

The inherited telephone network was built under federal and state regulations to realize substantial economies of scale inherent in the telephone network and to achieve universal and ubiquitous telephone service. To achieve that goal, basic telephone service rates were set below cost through an elaborate system of internal cross subsidies. The communications markets that generated the cross subsidies, business equipment leasing, and long distance service, also

created strong incentives for new firms to enter. Beginning in 1968, the FCC started down the slippery slope of allowing entry into those markets, which eventually threatened the entire rate structure and put an end to the telephone monopoly, for which AT&T served as national network manager.

The Bell System had also sought to minimize both transactions through vertical integration and marketing costs by offering a standardized regulated service. Under regulation, the Bell System evolved into a public service bureaucracy that defined its universal service obligation according to engineering standards, not to market revenue nor consumer needs. Profits were determined by regulatory review. Regulation provided for a reasonable rate of return on necessary investments and for legitimate costs of operating the system. Engineers and accountants determined what was necessary and legitimate. In 1982, the telephone system delivered a highly standardized and reliable product, Plain Old Telephone Service (known within the industry as POTS), to 92% of all households and all businesses. It was a highly efficient undertaking from a network engineering perspective. All Bell System companies operated under standard AT&T operating procedures with standard AT&T equipment and with collectively bargained contracts that established common human resource (HR) practices for virtually all 725,000 union- eligible employees across the system. AT&T similarly established an HR system for managerial employees that was standardized and created national internal labor markets for these employees.

In the old Bell system, employment practices were uniform within occupational groups but varied across occupations according to the nature of work and technology. There were three occupational groups that were segregated by sex: telephone operators and business office (later called customer service) jobs were female-dominated, whereas network installation, repair, construction, and maintenance were male-dominated (Hacker, 1979). AT&T successfully rationalized and automated the work of operator services early on, displacing the last workers who were directly involved in providing telephone service (Kohl, 1993). With the introduction of direct-dial long distance service in the 1950s, telephone service was completely converted to continuous process industry. Local business office jobs provided women with better jobs and offered customers a broad range of service, billing, repair, and problem-solving services. Women climbed internal job ladders from entry-level clerical and operator jobs to business office and/or management positions. The critical and high- paying jobs, however, were male-dominated plant construction and maintenance, business customer equipment installation and repair, and central office maintenance and repair. With a fourfold increase in demand for telephone service (measured by calling volume), employment in these hard- to-monitor craft jobs (skilled, semiautonomous, geographically dispersed) grew rapidly from 107,000 in 1950 to 275,000 at divestiture.

To manage a skilled labor force in geographically dispersed network and customer service jobs, AT&T developed a quantitative system of performance measurements and expanded the managerial work force to supervise these hard-to-monitor jobs. The managerial work force grew from 13.5% of the Bell system in 1950 to 29.3% in 1980, a ratio of managers to workers of 1:2.4 (Keefe and Boroff, 1994: p. 313).

The Bell work system in 1980 had many of the features of high- performance work systems currently being advocated. For its time, it offered quality service at relatively low cost through state-of-the-art technology. With the exception of operator jobs, which represented less than 11% of the work force in 1980, jobs in network installation and repair were highly skilled, semiautonomous, and problem solving in orientation. The universal customer service jobs (which required considerable skill, responsibility, and problem solving to meet individual customer needs) provided the kind of "one-stop-shopping" that current analysts advocate as the key to quality service (e.g., Schlesinger and Heskett, 1991). Employees frequently knew their customers well, either as neighbors or through repeated transactions; according to surveys, customer satisfaction was high.

Skill and training levels were high. Most entry-level jobs required a high school education; entrance examinations and selection procedures were highly selective; the average educational levels of employees included some postsecondary training; and employees received high levels of company-paid formal training and retraining. The well-developed system of internal job ladders created ongoing opportunities for advancement and lifetime security. Informal training supported continuous learning, as technologies and procedures regularly changed. The broadly defined job classifications provided management with high levels of flexibility, and when coupled with job security, new technologies and productivity improvements were rarely resisted by workers. Job security was part of the social contract, and workers reciprocated with high levels of loyalty, commitment, and obedience.

Telephone jobs were considered public service jobs, and employees took great pride in their work. Employee satisfaction was high, according to surveys of the time. To build commitment to the corporate mission, each employee was indoctrinated into the Bell System's "Spirit of Service." This doctrine rested on a basic commitment to provide every home and business with affordable and reliable telephone service. The "Spirit of Service" ethic became the integrating value among the disparate occupations and the cornerstone of the Bell System's public service ideology. Chester Barnard, the president of New Jersey Bell Telephone, writing in 1938, argued that "the endurance of organization depends upon the breadth of leadership; and that quality derives from the breadth of the morality upon which it rests" (Barnard, 1938: p. 282). The "Spirit of Service" was the moral purpose that integrated the formal and informal structures of the geographically dispersed Bell System and, according to Barnard, created the moral basis for governance by consent, serving as the ideological basis for each employee's commitment to the organization's mission. Supervisors were schooled in human relations techniques, and the company sponsored a variety of programs to integrate employees, their families, and even the union into the company community. Relations between labor and management at the corporate level were also cooperative, although they varied across states, localities, and workplaces. The highly stable demand and guaranteed profits led to a system of promotional ladders and employment security much more stable than that found in most other private sector enterprises.

Technology and Industry Consolidation Under Deregulation

Before examining current business strategies and employment practices, it is important to assess the implications of recent changes in technology, product markets, and industry structure for management strategies under

deregulation. What is striking in the telecommunications industry is that despite almost two decades of attempts at deregulation, in 1998 the former Bell companies continue to employ over 70% of the industry's work force and comprise most of the dominant players. AT&T still accounts for over one-half of the long distance market, and the regional Bells and GTE provide 95% 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 over 90% of wireless cellular service, although Personal Communications Services (digital wireless) will start off with many more firms in each market.

Moreover, mergers, acquisitions, and joint ventures have accelerated in the 1990s, not only among the former Bell companies, but among new entrants as well. Seven regional Bells are now five after the mergers of Pacific Bell and Southwestern Bell, and NYNEX and Bell Atlantic. SBC (Southwestern Bell) is acquiring Southern New England Telephone, a former Bell affiliate that was fully divested by AT&T in 1984. AT&T's proposed acquisition of Teleport will provide it with immediate local access to many of the largest urban business customers and transforms its position in competitive local access markets almost as dramatically as its earlier acquisition of McCaw Cellular, which overnight made AT&T the nation's largest wireless provider. Upstart WorldCom has transformed itself into a major telecommunications powerhouse through merger and acquisition. Since the AT&T divestiture in 1984, WorldCom has been the only firm to become a major player in the procompetitive telecommunications industry—all other firms (e.g., MCI and Sprint) were already in existence at that time.

WorldCom, formerly LDDS, became the fourth largest long distance carrier through a process of almost continuous merger. It now plans to acquire MCI for $37 billion in stock. Through merger and acquisition, WorldCom became the largest supplier in long distance leased data lines, acquired the second largest local competitive access carrier, MFS, and may come to dominate the Internet backbone with a 60% market share after its acquisition of MCI, the second largest long distance carrier (Keefe, 1998). GTE has grown from a handful of rural telephone companies into the largest provider of local telephone access and major competitor on the Internet with acquisitions, such as BBN, after selling its share of Sprint and its equipment businesses. On the other hand, ITT (formerly International Telephone and Telegraph) has divested or sold all of its telecommunications assets and left the industry.

Small upstarts do play an important role in the industry. They disrupt established practices within narrow market segments; their success in determining new methods, technologies, and approaches to competition is measured by their valuations at acquisition or merger. Failure to establish successful innovations, however, may also be measured in bankruptcy and liquidation. Nevertheless, the core of the industry remains, oligopolistic, and the extent of industry concentration has important implications for the extent of variation in employment practices.

One explanation for this level of industry concentration is an institutional one: The legacy of the Bell System continues to dominate the industry. This would suggest that there is a time lag due to institutional inertia, and that over time the power of institutional forces would erode; for example, as new entrants come into the market and

deunionization continues. However, this does not fully explain the abundance of mergers and consolidations among new entrants such as MCI and WorldCom.

Another explanation is that the nature of the product markets and technology provide incentives for merger and consolidation. Bringing competition to the industry has been complicated by the presence of network externalities, scale economies, excess capacity, and technological uncertainty. Networks exhibit positive consumption and production externalities (Economides, 1996). Consumption externalities arise because every communication involves at least two parties, the originator and the receiver. A decision by one person to contact another can generate an uncompensated benefit (or cost) for the contacted party, creating a consumption externality. Production network externalities arise because the private benefit to any one individual of joining a network, as measured by the value he or she places on communicating with others, is less than the social benefits to all other subscribers. Again, the subscription decision creates benefits that are not compensated through the market mechanism. Prices chosen by competitive markets are not economically efficient when externalities are present (Gong and Srinagesh, 1997). Perfect competition will provide a smaller network than is socially optimal (Economides, 1996).

Firms that operate network production processes are subject to economies of scale. They invest in costly communications networks that represent a substantial sunk fixed cost embedded in long-lived facilities with excess capacity. Once the network is constructed, the marginal cost of another communication is essentially zero (Gong and Srinagesh, 1997). The competitive standard that prices be set equal to marginal costs is a recipe for bankruptcy (Baumol and Sidak, 1994). The standard competitive model cannot aid us in making an economic analysis of networks nor can it help regulators or managers in setting prices.

Furthermore, all participants in the industry face substantial technological uncertainty as they build, modernize, and maintain their networks. The inherited publicly switched network faces a substantial challenge from the packet-switched networks used in data transmission and for the Internet. The traditional telephone networks are circuit based, where switched circuits are set up for the duration of a call. This entails an end-to-end circuit being set up to complete each telephone call. By contrast, the Internet uses a connectionless adaptive routing system in which no dedicated end-to-end channel is established for each communication. Instead, traffic is split into “packets” that are routed among multiple points, making the Internet an interconnected global network of packet-switched networks that use the Internet protocol (Werback, 1997). Internet telephony can rely on a seamless connection, where packets are routed on high-speed networks that create for any user the impression of a circuit connection. This, however, provides for a much more efficient utilization of expensive network elements. Congestion on the Internet that causes packets to be lost and concerns about the Internet’s reliability, however, still need to be resolved before packet-switched networks become full-fledged challengers to the publicly switched network. Even once these problems are resolved, the transition from a circuit to packet-based network will be lengthy. Internet access currently requires consumers to own a device (computer, terminal, or WebTV) that is considerably more expensive than a telephone set. The difficulty in changing consumers’ equipment is reflected in the fact that many consumers still use a rotary dial telephone.

Internet telephony also threatens the public policy commitment to universal service. The Internet operates as an enhanced service and is not required to contribute to access charges nor does it make a direct contribution to the provision of universal service. Even though there is uncertainty about the future of switching technologies, local access technologies are also competing with each other. At divestiture in 1984, all relevant or potential local access technologies were analog. These technologies were provided by the newly formed cellular service companies, the traditional telephone companies supplying wireline service, and potentially by the cable TV coaxial distribution networks. In 1998, each of these access technologies is in the early stages of digital transformation. There are several advantages associated with digitalization. First, because all information is transmitted in bits, the source does not matter; it can be voice, data, facsimile, or video. Second, given the advances in digital compression technologies, substantially more information can be transmitted at higher speeds over the same medium than in the past. Third, there is often less signal distortion in a digital transmission. Finally, digitalization places all transmission media in direct competition with one another. For consumers, this offers many more options, whereas for providers, it creates many more uncertainties. Betting on the wrong media will have dire consequences. The economic advantages and disadvantages among the competing media are ever- changing, which makes forecasting a nightmare, but unavoidable when investing in long-lived network elements.

In sum, the economics of the industry as well as technological uncertainty create 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 we see relatively little variation in business strategy and employment practices in this industry, the subjects to which we now turn.

Post-Divestiture Business Strategies

Given the continued dominance of the former Bell companies under deregulation and the fact that they enjoyed a highly skilled and committed work force, it would be plausible to think that they would embrace high-commitment HR strategies to compete on quality, service, brand name, and customer loyalty. They were unlikely to match the lower cost structures of new entrants such as MCI (formerly Microwave Communications Inc.) and Sprint in long distance and Teleport and Metro-Fiber Systems in local services. New entrants have lower unit- cost structures because they have little overhead and began with new more maintenance-free technologies. They also have lower labor costs because they start with fewer people per access line, they use nonunion labor with lower wages and benefits, and they have a younger labor force. MCI and Sprint also received support from the FCC in the long distance market by being allowed to charge lower prices and to not pay access charges during the transition period. No company, however, pursued a high-commitment strategy.

Cost-Cutting and Downsizing Strategies

The cost pressures of competing with real and anticipated new entrants led Regional Bell companies to focus heavily on cost-cutting and across- the-board downsizing, which starting in 1989 became their dominant strategy after they decided to pursue deregulation. AT&T faced competition after divestiture in 1984 and responded by benchmarking

itself against its lowest cost competitor. While initially viewed as a temporary strategy, downsizing became an increasingly routine part of business operations for AT&T in the decade following deregulation. AT&T reduced its domestic non-management work force by 60% between 1984 and 1995 (from 250,000 to 100,000). It cut approximately one-third of the management work force.

Over time, three trends emerged. First, increasingly higher percentages of surplused employees were managers. For example, in the first few years following divestiture, roughly one-third of displaced employees were managers. In the January 2, 1996 downsizing announcement, by contrast, 60% of the 40,000 targeted positions were in management. Second, the company began hiring new lower cost employees as it downsized incumbent employees. Third, involuntary rather than voluntary separations represented an increasing proportion of the terminations, with later rounds of downsizing offering employees smaller severance or early retirement packages. In the first two years of post-divestiture operations, for example, AT&T reduced its head count by 56,000 positions; only 25% involved layoffs. The remainder left through attrition, voluntary severance and early retirement programs, transfers within AT&T, or retreats back to the RBOCs. Between 1984 and 1992, 58% of separations in the unionized work force involved layoffs, and 42% involved voluntary separations. In 1996, the company downsizing announcement envisioned that most surpluses would occur through layoffs; however, the company backed away from this approach after considerable media scrutiny and public outcry.

The Regional Bell companies followed the lead of AT&T, but because they retained their regulated monopoly status until 1996, they were able to downsize through attrition in the 1980s. Increased and anticipated competition from local access providers led them to step up downsizing efforts in the 1990s and introduce forced separations for the first time. Overall, the RBOCs reduced the work force in their regulated businesses by 28% 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% of the workforce, to take place largely through forced reductions. Many of these proved unnecessary, however, because competition in local services has largely failed to develop by 1999, because growth in the demand for local access lines was grossly underestimated (particularly, second lines for Internet access), because the forecasted rapid transition to a fiber optic local access network proved to be wrong, and because of the economic expansion beginning in 1991.

Network Investment Strategies

Even though Bell companies downsized their work force, they invested in their networks, as did the new entrants. At divestiture, AT&T owned the only complete long-distance network. MCI and Sprint were able to gain market share by reselling AT&T service at substantially lower prices during the transition period. They each built digital networks and actively courted large business customers, who needed high-speed data networks, whereas AT&T remained committed to its analog network with all its sunk cost. AT&T quickly lost some of its most lucrative business customers,

who switched to MCI and Sprint. AT&T then aggressively depreciated its embedded network, incurring substantial restructuring charges, in order to convert to a fully digital network by 1991.

The Regional Bells have also been concerned that their embedded analog network might constitute a barrier to effectively competing in lucrative local access markets. They have aggressively depreciated their analog network based on twisted-pair copper access lines. By the mid- 1990s, most companies had replaced all of their network (trunk) cable with fiber optic, and they use fiber optic to serve large business customers and on a very limited basis as residential feeder cable; however, 92% of the cable (which links switches to customer premise) remains traditional twisted-pair analog access lines. By 1996, further conversion had stalled because of technical problems, market uncertainty, and advances in digital transmission technology that would allow the companies to provide digital access on existing twisted-pair access lines.

Market Organization and Customer Segmentation

In addition to force reductions and technology investments, a central concern of top management in the Bell companies has been to turn their engineering bureaucracies into market-oriented enterprises. As with cost cutting and technology strategies, AT&T was the first to move; the RBOCs and GTE in turn adopted similar market strategies, but with some lag time. Whereas AT&T began changes in strategy and organizational structure in the mid-1980s, the Bell companies began in earnest in the late 1980s and early 1990s. AT&T embraced total quality management in the mid-1980s, the Bell companies did so three to five years later. AT&T embraced customer segmentation, separate lines of business organization, and reengineering in the late 1980s; the Bell companies and GTE followed in the early 1990s. In response to market deregulation, therefore, the business and organizational strategies of the former Bell companies have been more similar than different, varying in emphasis or timing rather than in substance.

Table 4.1 compares the system of markets, business strategy, and management organization under the pre- and post-deregulation rules. Whereas in the past, companies geared their strategy and structure to state and federal regulators, they now respond to shareholders and segmented consumer markets. The RBOCs pushed legislative reforms on a state-by-state basis to shift pricing mechanisms from fixed-rate to incentive-based systems; the latter allow companies to keep a greater share of the gains from cost cutting and productivity improvements, provided they meet service standards. The availability of new digital broadband wireline and wireless technologies gives companies an increasing capability to shift from one standardized product (voice communication) over an analog system to providing a variety of products (including voice, enhanced features such as call waiting, voice messaging, data, video, and imaging) over a single network. The 1996 Telecommunications Act furthers this process by eventually collapsing industry boundaries and allowing companies to use the new technologies to provide long distance, local, cable, data, and other services to their customers. Consumer demand also favors service integration. Two-thirds of consumers in a recent poll said that they wanted their local and long distance needs met by one provider (J.D. Power and Associates, 1996). Once a provider establishes a line to a consumer, the marginal costs of providing additional services are minimal. In sum, consumer

demand, on the one hand, and the logic of network technology, on the other, call for the consolidation, centralization, and integration of service delivery systems, the opposite of what was advocated at divestiture (Temin, 1987).

Table 4.1. Telecommunications Services: Business Strategy and Structure

Components	Old System	New System
Capital market	Regulated by FCC, State PSCs: Bonds and bond-like stocks Stable rate of return 11% to 13%	Partially regulated: Growth stocks Rate of return 18% since 1984
Pricing mechanism	Regulated: Cost plus return Cross-subsidized: (long distance to local) (business to residence)	Partially regulated: "incentive-based" "cost-based" to promote competition
Product market	Standardized: analog, voice, and data	Differentiated: digital, voice, data, video, image
Technology	Cable twisted-pair copper cable, electrical analog signal, and T-Carrier digital radio transmission; electronic and electromechanical switching	Cable twisted-pair copper cable, fiber optic cable with digital multiplexed light transmission; digital circuit and packet switching, digital wireless and wireline access.
Competitive advantage	Low-cost, substantial scale economies, and labor productivity growth over 6% annually	Scale economies, declining costs, high reliability, customer service, brand name identification, and marketing promotions
Business strategy	Universal public service, "engineering driven"	Segment service markets, "market driven"
Mission	"Service is our moral purpose"	Enhance shareholder value
Employment contract	Lifetime employment, loyalty	Employability, be prepared to move
Labor relations	Union workplaces set employment standards	Nonunion workplaces set employment standards
Management structure	Vertical command and control Lifetime bell managers Stable bureaucratic–centralized	Lean bureaucracy experts and organizational professionals Market-driven–centralized

With respect to customer segmentation 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 as well. In addition, there are ongoing efforts to package particular sets of enhanced services to different commercial clients, according to the particular demand characteristics of industries, occupations, or other niches. Each is also investing billions of dollars in trying to differentiate their highly standardized network service offerings by building brand names. To support segmentation strategies, most companies have organized themselves away from state-based organizations to market-focused, line-of-business organizations. Customer-focused organizations combine sales, marketing, and service functions and incorporate streamlined support functions such as HR. Network Services, because of the "systemness" of the infrastructure, function as regional (or national in the case of AT&T and GTE) internal suppliers to the marketing organizations.

Reengineering and Organizational Consolidation

Most major players have used advanced information systems and process reengineering to support their market segmentation strategies, at the same time reducing costs. Advanced information systems allow companies to consolidate operations into large remote service centers, each dedicated to a particular clientele; process reengineering automates many service functions, so that telephone service may be turned on remotely without the help of field technicians on the ground. Reengineered information systems also allow remote diagnosis and repair of services. Overhead and direct labor costs fall and customer response time improves. After reengineering at GTE (see appendix), for example, the percentage of residential phone orders that are automatically established doubled, from 33 to 61%. Given these anticipated improvements in service and scale economies, most major telecommunications carriers undertook multimillion dollar reengineering projects, some more successful than others. It should be noted that MCI and other new entrants also undertook reengineering projects because of the rapid changes in information technologies and associated gains from scale economies.

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. It reduced the number of network operations centers to two. AT&T currently operates one operations center to serve the eastern United States and one center to run its network west of the Mississippi. Similarly, GTE, historically composed of 22 small independent telephone companies spread across the country, initiated a massive consolidation effort in 1993-1996; it consolidated 258 local worksites into 58 regionally based service centers and has built a single network operations center in Dallas. Regional Bell companies have undertaken similar consolidation strategies, but at the

regional level: they have dissolved their state-level telephone companies and reorganized them into regional corporate entities, with external facing market-based lines of business and a single network operations division. Each line of business has consolidated local business offices and network operations centers into regional mega-centers. Between 1993 and 1996, for example, US West consolidated hundreds of local customer service offices in its 14-state region into two large business centers, 12 small business centers, and 12 residential offices.

Variation in Employment Practices Within Firms

Powerful new information technologies, coupled with reengineering strategies, therefore, have driven organizational change within former Bell companies as well as among new entrants. HR and employment strategies in the post-divestiture period have been derivative of technology and reengineering strategies. The potential of reengineering, however, varies by product complexity and customer segment. It has been most successfully applied to simple transactions, such as orders for basic residential phone service. Business and more complex orders are less amenable to automation. This variation in product complexity and the capacity of information technologies is the source of variation in employment practices across customer segments.

Matching Customer Segments to Labor Market Segments

Unlike the past, when business office employees handled a wide variety of customers and types of inquiries, now service representatives are divided into residential, small business, and large business representatives. Job functions are further divided into sales and service, billing, collections, and repair services. Job fragmentation has been more extensive at AT&T than at the RBOCs. Comparing the 1984 and 1995 contracts between AT&T and the Communications Workers of America (CWA), for example, the number of wage grades for office workers doubled, from 11 in 1984 to 26 in 1996; the number of job titles (in grades) tripled, from a total of 53 to 149.

A major task of each company has been to transform their customer service operations into aggressive marketing organizations. The nature of the transformation depends on the market segment served by the center. A typical *residential* call center houses between 500 and 1,000 customer service representatives (CSR), each of whom handles 90-100 customers per day at 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) automatically sends another customer call to the “open” representative. Many of the interactions with customers are scripted by expert systems. Selling opportunities are prompted by the system software. CSRs need to master the art of sincere and authentic customer interactions while largely reading from a scripted text. In most companies, CSRs are supposed to have at least one-half hour per day of “closed time” away from the computer to finish up orders; but when call loads are heavy, closed time is often eliminated.

Managers and union representatives alike agree that 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, to provide “quality” service, and to turn over calls, all in the context of pervasive electronic monitoring. Monitoring and discipline occur through electronic monitoring, which both records the content of customer-

employee interaction and the time that employees spend in each type of work activity: on-line open to receive a customer, on-line with a customer, on hold with a customer (e.g., checking information or completing an order), closed (completing paper work, going to the restroom or lunch, etc.). Company-developed algorithms provide guidelines foT the amount of time allowable in each type of activity; managers at a central control panel watch for flashing lights (green, blue, red, etc.) that indicate if an employee has gone beyond the allotted time in any one area. Supervisors then use their discretion to counsel and/or discipline employees who are at variance with the targeted time allotments or schedule (known as "out of adherence"). Bell companies have universally adopted policies to enforce 90% "adherence" to schedules. If CSRs are late in taking their breaks because they are handling a customer call, they must go to their supervisor to get special approval. In some residential service centers, CSRs must raise their hands and request a supervisor's permission to take a rest room break. The electronic monitoring system times rest room breaks, and those that fall outside of adherence standards are a subject to disciplinary action. Recently, Excel, a highly competitive reseller of telecommunications services, has set even more stringent standards for performance with a lower compensation structure. The company supplements this approach with an Amway-type sales scheme, where sales representatives recruit family and friends, not only as customers, but as commissioned part-time sales agents for Excel. AT&T and other major companies now have subcontracts with Excel.

Call centers for *small business* representatives generally house 100- 200 employees, and business reps 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 and enters some of it into a computerized database, but spends considerable time off the telephone completing the order. More-complex order entry may also be handed- off to another employee. The pace in small business centers varies; however, they still tend to be fairly reasonable, and representatives freely consult with each other to solve non-routine problems or to 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. These sales people are either on purely commission pay plans or compensation plans based on salary plus commission pay, depending on the customer and market segment. There are several levels of account executives, which vary by client type and client load. But what matters is their ability to sell. They provide customized and personalized service through on-site and electronic exchanges and usually rely on additional support staff and CSRs to handle the mechanics of orders and service requests. 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 reps may move to small business centers, but further advancement usually depends on getting a college degree and having the demonstrated ability to sell.

In operator services, MCI has set the standards. In response to MCI's successful entry in the consumer market, in 1992, AT&T massively reengineered its Consumer Services business unit, which had just won *the Malcolm Baldrige Award for quality. In order* to compete with MCl's highly successful "Friends and Family" marketing program, AT&T decided that the business unit needed to cut *several* hundred million dollars in costs. A major target for cost reduction was

operator services, *which assisted customers in call completion. MCI had hired* an internal facilities manager, First Data Corporation, a subsidiary of American Express, to run its operator services. MCI then laid off all its operators, who-were offered jobs at $5 to $6 an hour, without benefits, to work for First Data.

AT&T estimated that it paid an average operator $12.83 an hour plus an additional $8 an hour in benefits. Although AT&T operators were 20% more productive and had a 50% lower error rate in call completion, it was unable to compensate for MCI's 70% lower labor costs. Hard bargaining ensued between the unions and the company. The result was an new part-time job title, paying $7 per hour with limited benefits, while retaining the full-time title, rate, and benefits. A new low standard was set: lower compensation, lower productivity, and lower quality, which all translated into substantially lower operating costs. Within a year, 70% of the operators were part-time. This occurred as a result of the simultaneous consolidation of operator services into mega-centers. Traditional operators were forced to geographically relocate, to follow their work into the mega-centers, or lose their jobs. Most chose to leave; less than 30% were retained. This two-tier approach had spillover effects for operator services in 1995 bargaining at the regional Bells, several of whom have followed the pattern.

Network Occupations

In contrast to the market-driven service and sales organizations, 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 are fully cross trained. Although 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 subspecialties. The single title gives operations management the flexibility from each company's HR bureaucracy to rapidly redeploy the work force according to changes in technology and in the demand for network services, without testing, job posting, or job bidding. Some operations management groups have also created their own training organizations to facilitate this mobility without relying on corporate HRs.

Technical work involving customer premise service and equipment, however, does follow the model where market segmentation leads to occupational segmentation. For example, Bell Atlantic bargained a new second-tier unionized subsidiary in 1995, Bell Atlantic Communications and Construction Services Incorporated (BACCSI). BACCSI technicians perform work, earning 50% of top craft compensation, work that was formerly done by Bell Atlantic Network Operations Installation and Repair Technicians, who earned 90% of top craft compensation. The BACCSI technicians compete directly with nonunion electricians for inside wire work. (Since divestiture, Bell Atlantic has lost 80% of the residential inside wire work to nonunion contractors.) Most of the former Installation and Repair Technicians have been promoted to top craft to work on cable and network modernization. During its first two years of operation, BACCSI hired and trained over 1,500 technicians. These workers are expected to home-garage their company vehicle and report directly to their first job by their starting time each morning. The workers drive their company vehicle both to and from work; however, they are not allowed to use the vehicle for personal business and are responsible for the vehicle at all

times. Their day starts when they report to their first job at 8 a.m., which means their travel time to their first job and from their last job is uncompensated. In the first two years of operations, some 500 BACCSI technicians in New Jersey have received transfers to work for Bell Atlantic Network Operations as “core” technicians at the top union wage scale.

In contrast to residential customers, large business customers Eire 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 a customer can receive service from technicians who are compensated at a 2:1 ratio (greater with overtime) and are trained in 3 weeks versus 3 to 5 years of combined school and on-the-job learning. At the customer’s request, the market segment determines the technician and his or her level of training and compensation.

The variance in technician skill, training, and compensation has expanded through the use of two-tier agreements, which have been supplemented with the use of contractors and contract labor. Some contractors recruit former Bell employees who took early retirement and receive Bell company-provided pensions and benefits for their labor force. They gain a cost advantage by not having to pay benefits. Other contractors follow the low-cost cable TV model: Some recruit workers who cannot pass drug and alcohol screens, aptitude or ability tests, background checks, or training regimens at any of the incumbent firms. These contractors gain an advantage by paying low wages for work that hopefully requires low reliability.

Throughout the industry, but particularly in residential service markets, firms, as they compete to match or lower labor costs, are testing new lower cost compensation packages and are recruiting workers who previously were not considered employable in the telephone industry, k At the other end of the market, large business customers are increasingly served by sales and technical professionals who are no longer the product of an enterprise-internal labor market, but are college-educated L professionals who are directly hired into their functional specialty.

Variation in Employment Practices by Occupation, Race, and Sex

Even though variation within occupations has grown, variation across occupations has in some ways diminished. Companies have reduced management hierarchies to some extent and have replaced front line supervisors with monitoring through the use of information systems. The electronic monitoring that was initially introduced into operator services I is now uniformly applied to customer services. Electronic monitoring of field technicians also occurs through the widespread use of handheld computers through which job completion reports and task assignments are made. Consequently, many workplaces have less direct supervision, but more systematic managerial control (Valias, 1993). Managerial control, however, has changed form; it has become less personal, but more constant, and more amenable to management by numbers.

Another striking trend is that variation in employment practices by gender and race occupational segregation has declined. This issue is important in this industry because AT&T became the most significant target of federal enforcement of equal employment statutes in the 1970s (Wallace, 1976). In 1970, the Equal Employment Opportunity Commission (EEOC) and several civil rights organizations sought to intervene in an AT&T rate case brought before the

Federal Communications Commission (FCC). After two years of administrative hearings and negotiations between AT&T and the federal government, represented by the EEOC, the Justice Department, and the Labor Department, an EEO Consent Decree was approved on January 18, 1973 by the United States District Court in Philadelphia. The Decree provided for a six-year program to restructure the AT&T personnel system. Women comprised the majority of the nonmanagement, union-eligible work force in the Bell System. Until 1970, occupations in the Bell System were sex segregated. Table 4.2 reports the trends in AT&T employment between 1950 and 1980. During this period, as discussed above, the expansion of telephone service resulted in a steady growth of the telephone crafts and management, a relative decline in the female nonmanagement work force, and a dramatic decrease in the number of operators.

The EEOC demonstrated that sex discrimination was the fundamental organizing principle for the Bell System's personnel system. The EEOC found that 92% of all Bell System employees worked in sex segregated jobs (using a standard of 90% of the occupation being of one sex to determine sex segregation).

Table 4.2. AT&T's Employment Distribution by Occupation and Gender, 1950–1980

	1950	1960	1970	1980
AT&T Employment	602,466	735,766	1,005,380	1,044,041
Bell System	523,251	580,405	772,980	847,768
Western Electric	73,458	143,352	215,380	174,372
Bell Labs	5,757	12,009	17,020	21,901
Bell System Employment				
Bell System management	70,630	105,833	169,401	248,562
Percentage of total (%)	13	18	22	29
Bell System nonmanagement	446,129	466,795	574,534	589,939
Plant craft forces (%)	24	30	35	44
Traffic operators (%)	47	34	29	16
Office, clerical (%)	19	23	24	10
Other (%)	10	12	12	31
AT&T Female Employment				
AT&T: Women	363,363	378,070	503,728	517,439
Percentage of AT&T Total (%)	60	51	50	50
Bell System: Women	340,504	331,780	425,428	443,819
Women as percentage of total (%)	65	57	55	52
Women in management	23,266	34,084	56,749	95,739
Women in nonmanagement	310,998	290,914	341,989	339,369
Percentage of management (%)	33	32	33	39
Percentage of nonmanagement (%)	70	62	60	58
Women as a percentage of:				
Plant craft forces (%)	0	0	1	23
Traffic operators (%)	100	100	93	90
Office, clerical (%)	92	93	93	93
Other (%)	54	52	64	79
Average age (years)	30	34	33	37
Average service (years)	9	11	9	12
Annual turnover (%)	19	20	27	n.a.

Source: Bell System Statistical Manual, 1950–1980. June 1982, AT&T Comptroller's Office. (NY: AT&T)

To break down gender segregation, the EEO Consent Decree contained an Affirmative Action Override. If it was necessary in order to meet the Decree's goals and timetables, the Override permitted the company to bypass seniority and the well- established trainability standards for identifying the best qualified candidate and select a candidate from the pool of basically qualified applicants. By 1979, AT&T showed significant improvements and was released from the court order (Northrup, 1979). With the downsizing and displacement over 15 years, however, it is important to revisit

the question of how downsizing strategies affect work force diversity. Surprisingly, industry-wide data from the EEOC show that women and minority employees have continued to gain employment in higher skilled and paid occupations, as indicated in Table 4.3. Occupational segregation by race and gender has continued to decline. Women have increased their relative representation in higher paid and traditionally white male occupations: craft, sales, professional, and managerial—but not technical—occupations. In 1995, women composed 40% of managers, 38% of professionals, 21% of technical employees, and 15% of craft workers. This pattern is particularly striking, given the 38% fall in the overall number of skilled craft jobs and the slight fall in managerial jobs. Minority representation in all occupations increased.

Variation in Employment Practices Across Firms

In the last section, we analyzed the dominant trends in business strategy and work organization in the industry and argued that there is relatively little variation in these practices across firms in the industry. There is more variation, however, with respect to specific employment practices. In this section, we explore differences among unionized firms and between union and nonunion firms with respect to union relations, compensation practices, training, and employment security systems.

Deunionization and Union Density

Despite only partial deregulation of the industry between 1983 and 1996, union density fell significantly from 55.5% of the total work force to 28.7% over the period. Among clerical and sales workers, union density fell from 63 to 35%, and among technical workers it fell from 68 to 52%. Deunionization occurred primarily because the traditional unionized companies cut labor costs by reducing employment levels rather than wages. At the same time, employment grew among new, nonunion firms. Deunionization was higher among clerical and sales workers, presumably because nonunion jobs expanded more quickly in these areas. (Most nonunion new entrants leased the use of the Bell network rather than build and maintain their own.) The rate of deunionization also accelerated: Over two-thirds of the decline occurred between 1990 and 1996 (see Table 4.4). Newer entrants, such as MCI and Sprint, and cable TV giants, such as TCI, have fiercely fought union drives in their facilities. For example, Sprint closed a San Francisco call center after workers began an organizing campaign; Sprint's action was found by the National Labor Relations Board to be in violation of labor laws.

Deunionization is also occurring among the Bell Companies in three ways: They have redefined traditional bargaining unit titles as managerial and exempt from labor laws; they have created unregulated "enterprise units" to handle wireless and other activities; and they have acquired nonunion subsidiaries. AT&T has been the most aggressive in pursuing a deunionization strategy, transforming itself from a predominantly unionized employer (67% organized) into a nonunion employer (42% organized in the United States). For example, by 1994, over 50% of AT&T employees were classified as either managerial or supervisory (and not eligible for union membership), compared with 29% in 1984. In addition, when downsizing the unionized core, it developed two nonunion subsidiaries, American Transtech, the largest U.S. telemarketing service, and AT&T Universal Card, the second largest credit card company. It also acquired two nonunion equipment manufacturers: Paradyne (data communications equipment) and National Cash Register (NCR).

NCR, the sixth largest computer company, with 1,300 locations in 130 countries, was subsequently spun off at divestiture in 1996. The RBOCs, by contrast, continue to have over 60% of the work force unionized.

Table 4.3. Change in Diversity, by Occupation: Telecommunications Services, 1982–1995

Occup. Group	Total # 1982	Occupation as % of 1982 Total	% Female 1982	% Min. 1982	Total # 1995	Occupation as % of 1995 Total	% Female 1995	% Min. 1995	% Change Occup.	% Change % Female	% Change % Min.
Manager	223,120	20.51	37.26	11.13	136,944	17.08	40.42	16.90	−38.62	8.48	51.86
Prof.	68,871	6.33	30.97	12.23	103,298	12.88	38.48	19.82	49.99	24.24	62.09
Technical	24,538	2.26	26.25	11.97	53,868	6.72	21.24	17.88	119.53	−19.1	49.33
Sales	26,169	2.41	55.08	16.46	66,280	8.26	59.83	29.08	153.28	8.62	76.7
Clerical	430,410	39.56	88.66	26.04	260,415	32.47	84.05	34.47	−39.5	−5.2	32.36
Craft	262,484	24.13	8.59	12.3	149,611	18.66	15.11	17.87	−43.0	75.86	45.31
Operative	40,435	3.72	52.75	26.77	25,963	3.24	51.01	33.73	−35.79	−3.3	25.99
Labor	4,700	0.43	36.09	17.23	899	0.11	16.57	25.70	−80.87	−54.08	49.13
Service	7,261	0.67	41.07	38.04	4,697	0.59	60.17	50.31	−35.31	46.5	32.25
Total	1,087,988	100.00	51.06	18.32	801,975	100.00	50.36	24.99	−26.29	−1.37	36.41

Source: EEOC data, 1982–1995.

Table 4.4. Deunionization and Union/Non-union Wage Inequality, by Occupational Group: Telecommunications Industry, 1983–1996

			Change (%)		
	1983	1996	1983–1990	1990–1996	1983–1996
Clerical & Sales Workers					
Total employment	450,755	388,655	−5.0	−8.7	−13.8
Percentage union (%)	62.6	34.5	−14.1	−30.9	−44.9
Median weekly earnings					
Union	$360	$553	32.5	21.1	53.6
Non-union	$380	$480	23.7	2.6	26.3
Real median weekly earnings*					
Union	$361	$352	1.0	−3.5	−2.5
Non-union	$382	$306	−5.7	−14.1	−19.8
Ratio: Union/nonunion median weekly earnings	0.95	1.15	7.1	14.5	21.6
Technical Workers					
Total employment	374,400	294,359	−8.9	−12.4	−21.4
Percentage union (%)	67.5	51.7	−4.4	−18.9	−23.3
Median weekly earnings					
Union	$486	$772	31.7	27.2	58.8
Non-union	$500	$694	28.0	10.8	38.8
Real median weekly earnings*					
Union	$488	$492	0.4	0.5	0.8
Non-union	$502	$442	−2.5	−9.4	−11.9
Ratio: Union/nonunion median weekly earnings	0.97	1.11	2.9	11.6	14.4

Source: CPS merged annual earnings files; * CPI-U adjusted (Batt and Strausser 1997).

Union Relations and Labor-Management Partnerships

Overall, union-management relations in the former Bell companies went from cooperative prior to divestiture to highly adversarial after 1984, but the degree of conflict has been greater in some companies than in others. The most aggressive corporate labor relations strategies emanated from AT&T and NYNEX in the 1980s and Bell Atlantic in the 1990s. NYNEX subsequently sued for labor peace and in 1992 negotiated neutrality and card-check recognition that apply in all nonunion NYNEX entities. Even though companies have signed a variety of neutrality agreements, it remains legally unclear how binding any of these agreements are on their nonunion subsidiaries.

The most sustained joint union-management productivity pacts emerged in companies located in right-to-work states having a mature collective-bargaining relationship and unions facing weak labor laws: BellSouth with CWA District 3 and US West with CWA District 7. CWA District 3 has a long history of a mature bargaining relationship with BellSouth. Unlike other companies, following divestiture it immediately agreed to bargain with the union on a regional, rather than local basis. It agreed without a fight to recognize the union as a newly created enterprise unit, and it agreed to joint study committees to assess the content of jobs and return inappropriately defined “managerial” jobs to the bargaining

unit; 500 such jobs were returned to the union by the end of the 1980s. Based on the experience of the 1980 Quality of Worklife Programs (QWL), the union and company also agreed to jointly sponsor a Total Quality Management (TQM) program in the late 1980s and early 1990s. In the early 1990s, they formalized union participation in monthly business meetings and set up a three-tiered joint structure for union-management collaboration to improve quality. The parties also negotiated the parameters for local experimentation in a range of workplace innovations, including telecommuting, self-managed teams, and bringing work back into the bargaining, unit that was historically subcontracted. The company funded pairs of union and management trainers to assist local managers and workers with workplace initiatives in order to improve quality.

The initial results *were* impressive. A 1994 survey of lower and *middle-level managers and local union presidents found* that 92% of managers and 81% of local presidents supported the union's participation in total quality as a competitive strategy for improving service quality, maintaining BellSouth's loyal customer base, and saving jobs. Seventy-seven percent of managers and 77% of union presidents believed that union participation was critical to the success of TQM. Ninety-seven percent of local union presidents were participating in monthly business meetings, and 32% were participating in weekly management staff meetings. Similarly, 90% of workers believed the union should participate in total quality, and 60% believed union participation was critical to the program's success. Twelve percent of workers in network and customer services had actually participated in total-quality problem-solving groups, and 5% of workers in core occupations were participating in self-managed teams. Quantitative evaluation comparing performance of self-managed teams and traditionally supervised work groups showed significant positive effects of teams for the company, workers, and the union: Performance of teams was significantly higher, indirect labor costs fell, workers preferred the arrangements, and nonmanagement jobs were saved at the expense of management jobs. The union also supported the company in going before state Public Utility Commissions (PUCs) to gain regulatory reforms that would shift rate regulation from fixed to incentive-based systems, a shift that allowed the company to keep some of the profits from efficiency gains (Batt, 1995,1996).

US West and CWA District 7 devised a similar joint strategy in the late 1980s. In the 1989 contract, the company agreed to a $10 million fund to support pairs of management and union representatives to work as "change agents" with local managers and workers to improve labor relations and initiate process improvements. A two-year (1992-1993) jointly sponsored job-redesign team developed a complete redesign for the 5,000 customer service representatives in the company—from a functionally specialized position to a "universal" one with a broad set of functions and responsibilities (U.S. Congress, 1993).

In the case of AT&T, the newly created business unit structure became a vehicle for differentiated labor relations strategies within the company: one seeking collaboration and high-performance teams among highly skilled technical workers and another aggressively cutting costs and downsizing among low-skilled occupations (e.g., operator services). AT&T's much-publicized "Workplace of the Future," negotiated with the CWA and International Brotherhood of Electrical Workers (IBEW) in 1992, was an attempt to improve union-management relations after a decade of job loss. The Workplace of the Future agreement created a four-tiered structure for union participation in workplace innovations

at the work unit, divisional, business unit, and corporate levels. As of 1996, however, successful implementation of Workplace of the Future had occurred only in Network Services, where the union has considerable bargaining power based on the critical role of the skilled work force in maintaining the network infrastructure. In the business units, where the union is weak or the skills of the labor force less critical, union participation in business decision making often has been ephemeral or limited to post-decision-making consultation.

NYNEX and Bell Atlantic have experienced the most adversarial labor relations in the post-divestiture period and virtually no jointly sponsored employee participation or job redesign efforts. At NYNEX, a bitter 1989 strike led the company to rethink its labor relations strategy and attempt to build a more positive bargaining relationship in the 1990s. Although it achieved considerable success in doing this, as we will describe in more detail, the better relations have not led to any labor- management partnerships with respect to work reorganization and performance improvement. Rather, until 1996, when the regional leadership changed, district leaders explicitly told local leaders not to become involved in participation or total quality programs; only a handful of renegade locals acted against regional policy. Instead, the union's strategy was a traditional one of "effects bargaining," augmented by internal membership mobilizations in combination with considerable external political and public relations pressure on the company. The result was the most far-reaching retraining, transfer, and employment security system in the industry. In the same 1994 agreement, CWA District 1 in New York surrendered its ability to fight the company on rate reform, where it repeatedly went before the state Public Service Commission (PSC) to complain of NYNEX's business practices and poor service quality. New York Telephone was ordered to hire 1,000 new employees as a condition of the PUCs support of its merger with Bell Atlantic in order to address chronic service problems formerly highlighted by the union.

In the Bell Atlantic case, top management unilaterally introduced quality programs and a culture change program, known as "The Bell Atlantic Way," both of which largely failed to accomplish stated objectives. In the 1990s the company became the most aggressive of the RBOCs in demanding wage and benefit concessions from the unions without being willing to offer much in terms of employment or union institutional security. Its aggressive 1995 contract concession strategy ultimately led to six months of union-management hostility and negative publicity. Workers reported high levels of acrimony at work and particularly resented unilaterally imposed policies of forced overtime. The state PUCs investigated service quality during this period, found repeated violations of service standards, and ordered the company to hire an additional 500 customer service representatives among other measures. The union conducted a highly effective corporate campaign targeting Bell Atlantic as Heartless (Not the "Heart of Communications") as its commercials claim. In December 1995, the CWA began to air an ad on television about Larry, the slob of a contractor who could be sent to your house as a Bell Atlantic contractor. The ad was an immediate success; customers who needed new installations or repairs emphasized that they did not want Larry. In this one instance, Bell Atlantic's need to establish its brand name gave the CWA some leverage with the public. Shortly after Larry appeared, the contract was settled.

Even though variation in union-management relations and the use of participation programs existed through the early 1990s, however, even the RBOCs with exemplary joint programs gave way to cost pressures in anticipation of local

market deregulation. In 1992, US West retreated from the strong contract language of "partnership" that it had negotiated in the 1989 contract and did away with its joint "change agent" teams. By the end of 1993, it suspended its joint job redesign team in customer services, stating that it was undertaking a massive reengineering project instead (U.S. Congress, 1993). Similarly, BellSouth and CWA District 3 agreed to virtually dismantle the joint quality program in 1995 bargaining.

Compensation Strategies

Several trends in *compensation strategies* stand out in the post-divestiture period. First, the Bell companies and unions have negotiated wage increases that basically track the consumer price index. In fact, between 1986 and 1994, in successive rounds of bargaining, across-the-board wage increases rose as a percentage of base pay. Second, despite the fact that collective bargaining was decentralized to the enterprise level (AT&T, regional Bells, and in some cases, local telephone companies), Bell companies continued to offer wages and benefits that formed a pattern (Cappelli and Perry, 1986, 1988; Keefe and Batt, 1997). This pattern continues through the 1990s, with few exceptions. Third, and perhaps most important, the union/nonunion wage gap was fairly small until 1990 but grew significantly between 1990 and 1996. Finally, the downward pressure of the union/nonunion compensation differential has led AT&T and the RBOCs to seek reductions in health care costs and to introduce various forms of contingent pay.

Tables 4.5, 4.6, and 4.7 compare negotiated wage raises, cost-of- living adjustments, and contingent pay strategies among AT&T and the regional Bell companies. The post-divestiture trend shows a steady increase in each successive contract. Across-the-board wage increases averaged 2.78% between 1986 and 1994, but they rose on average from 2.2% in 1986 to 3.3% in 1994. Slight variation in the pattern exists among the Bell companies, with BellSouth consistently negotiating the lowest annual increases (averaging 2% annually) and AT&T negotiating the highest (3.2% on average). Previously negotiated cost-of-living- adjustments were either restricted, suspended, or eliminated in all companies over the course of the decade. In 1995 bargaining, the patterned wage bargaining continued, with base wage increases of either 10.9% or 11% in each contract.

Each company also pursued some form of contingent pay based on business performance, including profit sharing, team awards, and success sharing, which is either linked to increases in stock prices or is a stock award. The unions resisted contingent pay methods in negotiations, treating them as company add-ons outside of the basic economic package. The firmness of union resistance to contingent pay, however, varied. CWA at BellSouth offered less resistance than the union at NYNEX and US West, who successfully rejected contingent pay in 1992 negotiations. In 1994, however, CWA at NYNEX accepted stock and cash bonuses amounting to 3.23% between 1995 and 1997. There has been increased reliance on signing bonuses to insure ratification and a shift away from profit sharing and team awards toward stock ownership plans. The companies have particularly pushed for commission pay for customer service and sales representatives. CWA and AT&T negotiated commission pay for top union jobs in sales; CWA District 7 at US West accepted trials of commission pay on a voluntary basis in 1995. In the first year, the employee "take rate" of volunteers was 58%. GTE also negotiated commission pay in some of its local contracts in 1996.

Table 4.5. Post-Divestiture Base Wage Increases in %

Company	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Ave
AT&T	2	3	3	4	2.5	2.5	4	3.9	3.9	3.6	3.5	3.4	3.3
Ameritech	2	2	2	2	2.5	3	3.5	3.5	3.5	3.5	3.5	3.5	2.9
Bell Atlantic	2	3	3	3	2.3	2.3	4	3.7	4	3.5	4	3.5	3.2
Bell South	2	1.5	1.5	4	1	1	4	1.7	1.7	3.6	3.5	3.4	2.4
NYNEX	2.5	1	1	3	1.5	1.5	4	4	4	4	3.5	3	3.0
Pacific Telesis	2	2	2	3.1	3.7	2.6	4	3.5	3.5	3.6	3.5	3.4	3.1
Southwest Bell	3	1.5	1.5	5	3	3	$5–$22	$7–$24	$7–$26	3.7	3.5	3.4	3.1
US West				5	2.5	2.5	5	3	3	3.6	3.5	3.5	3.2
Average Change	2.2	2.0	2.0	3.6	2.4	2.3	3.9	3.3	3.3	3.7	3.5	3.4	3.0

Table 4.6. Post-Divestiture Cost of Living Adjustment (COLA)

Company	1986	1989	1992	1995
AT&T	Suspended	Eliminated	None	None
Ameritech	In base and lump sum	Eliminated or no pay out	None or no pay out	None
Bell Atlantic	Restricted and lump sum	Restricted paid in base wages	Restricted paid in base wages < 1%	None
Bell South	Restricted paid in base wages	Restricted paid in base wages	Restricted 1.4% increase paid in base wages	None
NYNEX	Capped paid in base	Capped paid in base	Restricted pays CPI over > 9%	Restricted pays CPI > 9%
Pacific Telesis	COLA eliminated	None	None	None
Southwest Bell	Capped and lump sum payment	Capped split between lump sum and base	Eliminated	None
US West	Eliminated	None	None	None

Table 4.7. Post-Divestiture Contingent Pay

Company	1986	1989	1992	1995
AT&T	None	Profit sharing	Stock shares: $3300	Stock shares: $2,400 $1000 signing bonus
Ameritech	None	Profit sharing	Profit sharing	Success sharing $500 signing bonus
Bell Atlantic	$300 Lump sum signing bonus	Profit sharing	Profit sharing	$1500 signing bonus
Bell South	Lump sum bonus	Team incentive bonus based on profit and quality	Team incentive bonus increased	Lump sums in cash or stock $2,200
NYNEX	None	None	None	Stock shares $1,800
Pacific Telesis	Team award	Team award	Team award	Incentive plan
Southwest Bell	Team award $600 signing bonus	None	Profit sharing	Team performance $1,400
US West		Team award $600 signing bonus	None	None $1500 signing bonus

Greater conflict erupted over post-divestiture health care bargaining in which companies pushed for some form of employee cost-sharing of benefits. By 1992, all companies except NYNEX had successfully shifted to managed-care frameworks for basic health coverage, although four companies (Bell Atlantic, NYNEX, Pacific Telesis, and US West) endured strikes over the issue in 1989. Only at NYNEX did employees, after the bitter four-month strike, hold on to traditional coverage.

The Union-Nonunion Wage Cap and Wage Inequality

Given the significant decline in unionization, one might expect that union wages would converge toward nonunion rates. Theoretically, when union density is high, one would expect nonunion firms to imitate the dominant practices of union firms in order to attract skilled employees; but as union density falls, the dominant model erodes and the nonunion model should exert downward pressure on union standards, leading to a reduction in the union-nonunion wage gap. This has not occurred in telecommunications, however. Until 1990, union density fell slightly and union wage standards prevailed in the industry, with the gap between union and nonunion wages being relatively small. Since 1990, however, the acceleration in deunionization has been accompanied by a dramatic rise in the union-nonunion wage gap. This has occurred through a decline in the real wages of nonunion workers: by 14.4% among technical workers and by 21.6% among clerical and sales workers (Table 4.8). This figure underestimates the differences in total compensation, however, by failing to take into account the higher levels of nonwage benefits for union workers and the greater use of part- time and contingent workers among nonunion employers.

Another source of rising wage inequality is the increase in dispersion within both the union and the nonunion segments. Tables 4.9 and 4.10 illustrate these trends. Among unionized sales and clerical workers, the 9:1 wage ratio increased from 2.00 in 1983 to 2.43 in 1996; for

Table 4.8. Growth of Wage Inequality Within Union and Non-union Segments, by Occupation: Telecommunications Industry, 1983–1996

			% Change (%)		
	1983	1996	1983–1990	1990–1996	1983–1996
Clerical & Sales Workers					
Union real weekly earnings*					
10th percentile	$223	$188	–3.9	–11.8	–15.6
90th percentile	$446	$456	3.0	–0.6	2.4
Non–union real weekly earnings*					
10th percentile	$221	$153	–13.4	–17.3	–30.7
90th percentile	$729	$650	–16.0	5.2	–10.8
Ratio of 90th to 10th percentile					
Union	2.00	2.43	7.1	14.2	21.4
Non-union	3.30	4.25	–3.0	31.8	28.8
Technical Workers					
Union real weekly earnings*					
10th percentile	$351	$306	–12.9	0.0	–12.9
90th percentile	$602	$690	1.6	12.9	14.5
Non-union real weekly earnings*					
10th percentile	$241	$224	1.6	–8.5	–6.9
90th percentile	$753	$701	1.6	–8.5	–6.9
Ratio of 90th to 10th percentile					
Union	1.71	2.25	16.7	14.8	31.5
Non-union	3.13	3.13	0.0	0.0	0.0

Source: CPS merged annual earnings files; * CPI-U adjusted (Batt and Stausser 1997).

the nonunion group, it grew at a higher rate, from 3.30 to 4.25 over the same period. The story of the changing wage structure among union and nonunion technical workers is quite different than for clerical and sales workers. For nonunion workers, the 9:1 ratio remained unchanged (at 3.13) for the period. In the union segment, the opposite occurred: the 9:1 ratio increased 31.5% for union workers (from 1.71 to 2,25). The increased wage dispersion is about equally attributable to a decline in the lower tenth 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 (previously discussed). These include (1) labor segmentation strategies designed to fragment job functions and link employee groups to market segments, raising wage dispersion across wage grades; (2) contingent and commission pay strategies; (3) negotiated two-tier wage structures, as in AT&T operator services and the Bell Atlantic network agreement; and (4) 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 work force. In the 1990s, the companies misjudged the demand for new services, particularly the

Table 4.9. Post-Divestiture Employment Security Bargaining Outcomes Showing Training and Education

Company	1986	1989	1992	1995
AT&T	Joint alliance and ETOP programs established	Alliance funding increased Broader tuition assistance	Alliance funding increased	Alliance funding continued
Ameritech	No change	Increase tuition assistance Training Opportunity program (TOP)	Educational sabbaticals TOP expanded	Career and personal development plan $3500 per year
Bell Atlantic	$5 million training and development fund	$3 million for training fund	$3 million for training fund	
Bell South	Limited training and retraining	Training and retraining open to all	Educational sabbaticals added	Improved education and training partnership
NYNEX	No change	No change	No change	Two-year college technician program and sabbaticals
Pacific Telesis	Joint training fund	Joint training fund	$3 million for training fund	Horizons retraining $16 million
Southwest Bell	No change	No change	No change	No change
US West	No change	Pathways retraining programs	Surplus priority access to training	No change

Table 4.10. Post-Divestiture Employment Security Bargaining Outcomes Showing Severance and Voluntary Incentives

Company	1986	1989	1992	1995
AT&T	Income protection program enhanced	Income protection program enhanced	Income protection program enhanced	No change
Ameritech	No change	Expanded early retirement income	Increase in income protection	No change
Bell Atlantic	No change	Income security plan	Income protection program enhanced	No change
Bell South	No change	No change	Improved early retirement income	No change
NYNEX	Income protection program	Incentives for early retirement	Incentives for early retirement	Add 5 years to service and seniority for pension eligibility
Pacific Telesis	No change	No change	New early retirement severance increased	Improved income protection and separation benefits
Southwest Bell	Incentives for voluntary separation	Early retirement income improved	Voluntary severance expanded	No change
US West		Enhancements for voluntary separation	Enhancements for voluntary separation	No change

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 nonunion segment, the story is different. The data suggest that nonunion employers attempted to keep up with union wage practices until the late 1980s but then broke with the pattern and pursued a lower wage strategy. The dramatic fall in real wages since 1990 is striking. Moreover, it is also notable that for both occupational groups, nonunion workers at the high end (90th percentile) experienced falling real wages: 11% among clerical and sales workers and 7% among technical workers. This finding runs contrary to the idea that the market demand for high technical skills (whether in office computers or programming skills) would raise wage dispersion. That is, among nonunion workers, the higher skilled workers found their wages falling despite the common perception that technical skills are in short supply.

Another example of a two-tier wage system is a 1995 agreement at Bell Atlantic for telephone installation and repair, covering the inside protector, wire, and jacks. A new subsidiary, Bell Atlantic Communications and Construction Systems Inc. (BACCSI; previously discussed), was the result of early bargaining with the IBEW, then with the CWA. In return for a compensation structure topping at 50% of the incumbent workforce with fewer rights, the IBEW obtained a 5-year contract that provides their outside network operations work force with job protection and also upgraded all installation and repair technicians to top craft titles. The BACCSI agreement sets wages and benefits below nonunion levels in the cable TV industry. The IBEW continues to recognize the need for a lower wage technician but plans to roll BACCSI into the core agreement over the next five years. Other agreements have created lower wage job titles to perform some multimedia coaxial and fiber work, which is in direct competition with cable TV. Generally, these agreements preserve splicing work inside the core contracts at existing wage rates. Both unions seek to reduce and eliminate nonunion contractors in network construction and maintenance. Similar agreements have been negotiated at BellSouth to bring in previously subcontracted buried-service wire work and at US West and PacBell to provide union coverage to contingent customer service and telemarketing employees.

Training, Advancement, and Employment Security

Downsizing, consolidation, and reengineering have significantly altered the prior Bell system internal labor markets that provided a steady supply of skilled employees for firms in exchange for upward career mobility and lifetime employment security for employees. Because of the ingoing nature of downsizing, the break in organizational career structures and employment security is more than a temporary phenomenon. Downsizing destroyed the social contract and the sense of shared mission in the industry. For many employees, the external conditions did not warrant the reductions in force through layoffs in the period 1992- 1994. When the companies undertook downsizing, they were reporting excellent profits (between 1984 and 1997, the industry outperformed the S&P 500 by earning an annual average rate of return of 18% compared with 15% for the S&P 500), and the new competitors were years away from presenting a real threat to market share or margins. People could not understand why their company so abruptly and aggressively decided to get rid of dedicated and loyal employees rather than rely on attrition and retirement incentives.

As they understand it now, it was to send the message, “Your service, your loyalty, your dedication, and your experienced-based skills are not appreciated. Your career and your family’s livelihood are expendable compared to the bottom line.” Going forward with downsizing has made any other change programs highly suspect; from the employees’ perspective, executive management is simply not to be trusted; they have no moral purpose.

Bell companies also have not developed coherent alternative strategies to replace the internal training and development systems of the past. At least in this transitional period, there is considerable evidence that internal promotional systems are stalled, whereas the employment security bargain has been replaced by an “employability” doctrine. Even though companies still have high levels of training for new entrants to jobs at all levels of the organization, many have outsourced their training departments to specialized training providers. Opportunities for company-sponsored training for career development purposes are curtailed. Instead, the companies continue to provide tuition reimbursement and encourage employees to gain skills and competencies on their own in order to improve their “employability. ” Training on company time for development purposes or special programs for total quality, team-building, and other behavioral skills are severely curtailed.

For the nonmanagement workforce, all Bell companies and unions have negotiated various forms of voluntary severance packages and pension enhancements to encourage early retirement (see Table 4.11). They have also negotiated retraining and transfer programs as a form of employment security—either for displaced workers who plan to leave the company or for those in populations targeted for downsizing who seek new jobs in growing areas of the business (see Tables 4.9 and 4.10). AT&T’s “Alliance for Employee Growth and Development,” negotiated in 1986 and renegotiated with expanded funding in 1989, 1992, and 1995, is among the most publicly well known of any joint union-management retraining program. Between 1986 and 1992, the Alliance spent $80 million providing courses in career counseling, financial counseling, and resume writing to 59,451 union members, 60% of whom were active employees. Employees generally used the program either to retrain for occupations outside of AT&T or to train to pass entrance exams for higher skilled positions inside the company; they also used other AT&T tuition reimbursement programs for post-secondary technical and/or college training (Batt and Osterman, 1993). Additionally, AT&T established a national, automated transfer system in 1989 and access to transfer to nonunion subsidiaries in 1992. Despite these efforts, AT&T faced profound employee demoralization. The 1991 AT&T Employment Security Survey, for example, found significant declines in the attitudes of the unionized work force. A 1981 Bell System survey found that 68% of nonmanagement employees felt that the company was providing job security and only 8% did not, whereas by 1991 the numbers at AT&T had more than reversed themselves, with over 73% feeling that there was little job security. In some business units, less than 4% of the nonmanagement employees felt there was any job security. Less than 20% of the employees surveyed had confidence in management’s ability to lead and solve the corporation’s competitive problems. Over two-thirds felt they were unable to influence events that affected their employment at AT&T. And, almost one-half of the employees surveyed had been surplused (their job abolished) at least once. The surplused employee group on average had been surplused two-and-one-half times.

Table 4.11. Post-Divestiture Employment Security Bargaining Outcomes Showing Transfer and Recall Rights

Company	1986	1989	1992	1995
AT&T	Job information center	Automated transfer system Displaced priority	Access to nonunion subsidiaries for transfer	No change
Ameritech	No change	Relocation allowance Increased medical benefits of laidoff employees	Priority placements for displaced workers	Hometown jobs Employment guarantees within market area
Bell Atlantic	Job information center for displaced employees	Employee career resource centers	No change	Job security for some occupations
Bell South	Career continuation program	Employment security partnership	Joint committee on subcontracting	Increase mobility rights Extend bargaining unit
NYNEX	Priority placement for displaced	No change	No change	No layoff Broad transfer rights
Pacific Telesis	No layoff agreement	No layoff agreement Transfer and relocation assistance improved	No layoff Automated transfer system	Improve work force movement
Southwest Bell	Career resource center Notice increased to 90 days	No layoff agreement	No change	Home town jobs Find jobs in market area
US West		Upgrade and transfer plan	Joint committee on skill needs	Broader recognition Transfer to mobile

When compared with attitude data collected at other traumatized organizations, the intensity of AT&T employees' pessimism goes beyond the negative attitudes found in many of those organizations. There are several reasons for these catastrophe-like responses. First, many employees chose to work at AT&T because of the Bell System's commitment to employment security, and now they face chronic insecurity. Second, downsizing has been a protracted ordeal that started in 1984 and still persists today. Third, AT&T employees use the former Bell System employment standards, which until recently have remained largely intact at the local Bell Operating Companies, to judge AT&T's new employment practices. Finally, AT&T is widely recognized as a progressive, innovative employer for its retraining, out-placement assistance, employee participation, and family leave programs. Many employees find it difficult to reconcile AT&T's positive public image with their recent personal experiences. Employees systematically underestimate (by 60%) the amount of downsizing that has occurred at AT&T (Boroff and Keefe, 1992).

Of particular significance is the fact that although retraining and transfer programs exist on paper, many employees find themselves unable to take advantage of them. When AT&T reconfigured its national organization, it consolidated offices and located them in geographically dispersed areas. Whereas in the past, employees would follow job ladders in local offices, now they often must move across the country to gain promotional opportunities. According to the 1991 survey, however, the average worker who survived successive downsizing is immobile with family commitments; he or she is White, 43 years old, married with children at home, a homeowner, a high school graduate with some college, a CWA member with 18 years of AT&T service, and annually earns $26,000 with good benefits. Some 87% of the survey respondents said they wanted to keep their current jobs until they retire, but less than 10% believed that there is any opportunity for advancement at AT&T. RBOC retraining and transfer programs have been similar to those of AT&T but have tended to have lower funding. Some, but not all, provide access to jobs in nonunion subsidiaries; some, but not all, make an explicit commitment to employment security (see Tables 4.9 and 4.10).

Despite the slower pace of downsizing, frustration with declining employment security was also high among regional Bell company employees recently surveyed (Batt, 1995), and in this case, managers were more adversely affected and critical of top management than were nonmanagement employees. Eighty-six percent of workers and 92% of managers said job security had decreased in the previous two years; less than one-quarter were satisfied with the current level of job security. In this case as well, demoralization not only centered on job insecurity, but on the perceived lack of alternative strategies for the future. Downsizing reduced opportunities for mobility: 83% of workers and 89% of managers indicated that opportunities for promotion had declined; 72% of workers and 78% of managers said opportunities for lateral transfer had declined. Only 5% of managers at the company were promoted to higher pay grades in 1990, a fraction of what existed during the 1950s through 1970s (Howard and Bray, 1988). Moreover, where mobility existed, it often meant forced relocations to save jobs: 38% of managers in the 1994 survey said they had to relocate in the prior three years as a result of organizational restructuring. The experience of organizational instability and uncertainty is reflected in employee dissatisfaction over particular aspects of their jobs and of corporate leadership more generally. Whereas over two-thirds of workers were satisfied with their jobs, benefits, and pay, only 14% were

satisfied with their opportunities for promotion and 27% were satisfied with their job security. The pattern was similar among managers: whereas 70% or more were satisfied with their jobs, pay, and benefits, less than 20% were satisfied with their employment security or opportunities for advancement. In sum, employees appeared to like the work they do and the skills they used, and they had very low absentee rates. Most scored high on commitment variables such as their willingness to work harder for the company, their pride in working for the company, and the loyalty they felt. But they were critical of top management's commitment to them: to employment security and advancement, to providing adequate resources for getting the job done, and to taking into consideration the interests of employees when making technological and organizational decisions (Batt, 1995).

In contrast to AT&T and the other regional Bell companies, NYNEX negotiated the most far-reaching employment security framework in the industry. The 1994 contract provided a special retirement incentive that adds six years to both service and age; it also included a 30% Social Security supplement until age 62 or a $500 annual bonus, whichever is greater. The incentive program was aimed at voluntarily eliminating 16,800 of 57,000 (or 30%) of the nonmanagement jobs at NYNEX and was estimated to cost over $2 billion or $77,000 per participating employee. Other components of the agreement sought to create a future for the surviving work force. NYNEX committed itself to a no-layoff clause where displacement is due to changes in organization, work process, or new technology. Layoffs are permitted only in response to volume reductions. A major innovation was the creation of a two-year Associate's Degree program in telecommunications technology, open to all bargaining unit employees. The employees work four days a week and go to school the fifth day on company time. All educational expenses are paid by the company. After graduation, employees receive a $50 per week increase. NYNEX's strategy recognizes that it is a high labor cost supplier and offsets this cost disadvantage with a highly educated, flexible, and productive work force. In the first two years of the program, roughly 1,100 employees enrolled (Clifton, 1995; personal communication, November 24, 1996). In addition, all NYNEX employees with five years of service are eligible to take a two-year educational leave. They can receive $10,000 per year for educational expenses while retaining full benefits, seniority, and a guaranteed job when they return. The contract also created a job bank and a new job sharing provision. Union workers are guaranteed access to all new NYNEX ventures in the information industry. New subsidiaries are required to start up by offering union workers the opportunity to bid into the new jobs. Wage increases were 4% in 1994 and in 1995,3.5% in 1996, and 3% in 1997, with an additional 3.23% in stock and cash bonuses over the term. Cost- of-living protection kicks in if inflation should exceed 8%. The fully paid medical plan was maintained for the life of the agreement.

Conclusion

We have argued that the economies of system in the telecommunications industry coupled with the dominance of former Bell system companies has created a set of unique circumstances that shape the direction of management and employment practices in this industry. Despite market deregulation and opportunities for new entrants, technological advances have provided incentives for mergers and organizational consolidation. Despite technological uncertainty, the major players have undertaken quite similar approaches to business strategy, organizational restructuring, and the use of technology and process reengineering. All companies are attempting to take advantage of system economies inherent

in the nature of the product market and technology to provide customized packages of multimedia products to identified market segments. They have reorganized into market-driven business units providing differentiated services to long distance carriers, large businesses and institutions, small businesses, and residential customers.

Companies have looked to new technologies and process reengineering to accomplish the twin goals of improving sales and reducing costs. The shift from analog to fully digital systems has improved the quality and speed of transmissions; it has shifted the demand for skill away from traditional mechanical (blue-collar craft) skills and toward digital (white- collar technical) skills. Similarly, companies have used reengineering to accomplish business unit reorganization and reduce response time through the automation of the service order process. Because reengineering has tended to be more successful in automating simple transactions, it has eliminated lower skilled clerical and customer service jobs, also resulting in an upward shift in the demand for skills.

Human resource practices are derivative of market and technology strategies. They increasingly vary within companies and within occupations by market segment. Within the unionized core, some variation in HR practices may be traced to variation in union-management relations. Those companies and unions with mature bargaining relationships and weaker unions (e.g., BellSouth, US West) have been temporarily successful in creating partnership strategies to enhance quality and customer service. In other cases, aggressive union (e.g., NYNEX) or management (e.g., Bell Atlantic) strategies have led to new employment practices that break from a de facto pattern among former Bell companies.

Far greater variation, however, exists between the union and nonunion segments of the industry. The growth in the union-nonunion compensation gap has put increasing downward pressure on historically bargained union standards. We suspect that recent examples of two-tier wage structures, commission pay, and contingent employment practices found within the unionized core are likely to diffuse more rapidly in the next decade, particularly as the traditional work force retires and gives way to a younger generation.

Finally, we did not find examples of successful integration of macro- organizational restructuring and reengineering on the one hand, and the use of team-based systems on the other. Rather, there is considerable evidence that downsizing and restructuring has led to employee demoralization. As a result, we do not yet have a “best practice” model within this industry. Instead, the telecommunications industry does have something to offer the high-performance literature. In this industry, even though it is oligopolistic in structure, no single firm defines the performance standards. The telecommunications industry with high rates of productivity growth, rapid advanced technological diffusion, and decades of high and sustainable levels of performance improvement has distinguished itself as a high-performance industry. In a highly dynamic market such as telecommunications, it may be industrial performance that ultimately defines the firms—who they are, what they do, how they are organized, and what their employment practices are.

The big issue confronting the industry, and crucial for continued productivity growth, is how continuous learning and coordination among employees takes place. Historically, among professional, technical, and frontline employees,

formal job ladders and long-term employment relations coupled with informal social organization provided continuous train- ing. Informal collaboration with other skilled employees was an important source of continuous learning. Large-scale reorganization has broken up formal job ladders and informal social networks, and companies have not yet developed new organizational forms to replace the old ones.

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Appendix

Reengineering the Service Order Function at GTE

The service order fulfillment process consists of three basic processes: order creation, facilities assignment and/or design, and dispatch and installation. Traditionally, service representatives would take orders from customers and create an order either manually, or increasingly in the 1980s, on-line. The service rep would give the customer a standard interval for service to be activated because she did not have access to inventory and dispatch information. Instead, she would pass the order to the Facilities Assignment Center (FAC), where an assignment clerk would check the inventory of physical plant to identify whether or not a line was available for the customer. FAC clerks would then send the assignment to dispatch clerks at the Dispatch Assignment Center (DAC), who would manually prioritize and dispatch each job to a field technician. Customers would call in to get a status update, and service reps would call the local FAC or DAC and report back to the customers. Once the field tech had completed the installation, he would call back into dispatch to report and get another assignment. When service is disconnected, the technician manually disconnected the wires.

In summary, service activation entailed numerous hand-offs to employees working in other departments, who input the appropriate customer information into distinct databases (a source of additional errors), including billing, 911 services, directory assistance, and central office switches, causing duplicate entry of information, and lost time among employees who routinely called in for updated information and waited on hold to obtain or gain information or to receive new assignments.

Over time, telephone companies have sought ways to automate this process in order to reduce response time and improve efficiency. By creating dedicated lines to each customer premise, for example, companies may turn services on and off without manually connecting and disconnecting service wires. Process reengineering is another attempt to mechanize service order fulfillment. The goal at GTE was to reduce costs per call and achieve *"OneTouch"* service for 85% of residential consumers. *"OneTouch"* means that customers interact only once with the telephone company, at the point of initial contact, and service is automatically activated.

Under the new system, the customer service associates take all of the relevant information on-line. Because the order entry and inventory data systems are now linked, service associates can see whether inventory is available and whether service may be automatically activated; therefore, while on the phone with the customer, they can set a date

for service activation or book an available date for a technician to go on-site. Using interlinked databases, the service associate currently absorbs some of the assignment and scheduling work previously performed by clerks in the FAC and DAC. A centralized resource management group monitors the volume of activity and resource availability.

GTE Business orders have been similarly automated, but because these orders are more complex, a much lower percentage may be automatically assigned. In complex orders involving Centrex systems or ISDN, for example, existing inventory must be configured to provide the service before the inventory is assigned to a customer premise. At the other end of the system, an automatic work distribution system lists jobs for the day by one or more geographic areas. In theory, the redesign creates zone technicians, most of whom home-garage their vehicles and are dispatched from home each morning to their first job. Using their laptop computers to receive a list of jobs for the day, they can set their priorities for completing jobs depending on location and whether commitment time for completion is morning or afternoon. They are also to report completion of jobs through laptop computers. Ideally, they would gain a sense of ownership over their zone, transforming the outside technicians into inside independent contractors, who are accountable for the service in their zone. Implementation of the design in the field has been problematic, however, for several reasons: the outside world is nonstandard; work load varies by geography; no technician can carry all the tools, supplies, and equipment needed for every installation and repair; and not all are equally qualified to perform the work. In these cases, the zone model breaks down, and more employees report to the work center each day. To date, there are no measurable improvements in technician productivity, morale, or sense of ownership. The use of laptop computers, however, has improved reporting and efficiency in the hand-off of work (as compared with the old system, where technicians often had to wait on hold or call back to file reports and would give up or not bother). Under the reengineered model, network labor costs are lower for at least two reasons: first, the span of control of supervisors has increased from 1/10 to 1/15 or 1/20; second, a sizable portion of the technician work force has been converted to seasonal status, working in the summer months when the installation and repair workloads are heavy and getting laid off in the winter with no commitment for recall.

Overall gains resulting from reengineering are substantial: in 1993, 33% of all residential orders were One-Touch; after reengineering, the rate was 61%. Average handling time decreased from 520 seconds per call to 450 seconds per call. Reengineering also eliminated one million, or almost one third, of all dispatches to customer premises and accounted for $95 million in savings. Between 1994 and 1995, revenues per call increased from $9.20 per call to $11.41 per call. (This is a conservative estimate because it excludes new products sold and compares sales on the same set of products.) If new products are included, revenues rose to $18.00/call. Reengineering reduced costs per call and improved efficiencies through a number of changes:

- Overhead was reduced through the closure of 153 offices (19 remain)
- Incoming calls were reduced by 25% through the use of an intelligent voice response unit system (IVRU technology), which informs customers of the status of their requests
- Automatic call distribution systems route customer, by segment, to correct call center

- Automated order process and EDT lines cover 9.1 of 21 million order calls, or 43%; in residential services, an icon-driven windows environment allows service associates to more quickly enter customer information and switch between several databases at once
- The OMEGA assignment system has reduced dispatches by 20% and manual design by 10%.

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