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Still a Coordinated Model? Market Liberalization and the Transformation of Employment Relations in the German Telecommunications Industry

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In the 1980s and 1990s, the German telecommunications industry appeared to be an important case study demonstrating continued cross-national divergence in institutions and employer strategies. The union and works councils at the former monopolist Deutsche Telekom (DT) used their influence over strategic decision-making and regulatory reform to guide incremental adjustment to new technologies and more competitive markets (Turner 1991; Batt and Darbishire 1997; Katz and Darbishire 2000; Darbishire 2005). DT, in turn, adopted 'labor mediated' restructuring strategies, which maintained high wages, stable jobs, and worker skills at a time when incumbent firms in the US and UK were pursuing 'market mediated' approaches that involved forced layoffs and deskilling (Katz 1997).

Developments since the late 1990s have undermined many of these distinctive features of the German telecommunications market and contributed to growing fragmentation in national collective bargaining arrangements. New regulations in 1998 ended DT's monopolies in all segments, encouraging the expansion of low-cost service providers with weaker, or no, collective agreements. Following privatization, DT management has come under increased pressure to reorient the company towards maximizing shareholder value, at the same time that it faces declining market share and growing price-based competition. This shift towards more liberalized markets, shareholder-oriented corporate governance, and non-union competition suggests growing convergence on the conditions incumbent providers in liberal market countries like the US faced in the 1990s. At the same time, other institutions have proven more resilient, including extensive co-determination rights, Germany's 'dual' apprenticeship training system, and strong union presence at DT – all of which have traditionally been viewed as key supports for worker participation in restructuring (Streeck 1991; Turner 1991).

In this paper, I ask how, and to what extent, these persistent differences in markets and institutions have influenced the restructuring strategies of large German telecommunications firms. Findings from national data and case studies suggest that institutional effects are increasingly varied at both the industry level and across establishments in lead firms' production chains. Despite bargaining decentralization, works councils at DT and its major competitors have been able to participate in work reorganization decisions and encourage management to invest in worker skill and participation. However, a second trend of outsourcing and subsidiary strategies may allow firms to by-pass these institutions, leading to growing labor market segmentation and declining coordination between works councils.

The following sections examine these restructuring trends and their effects at the industry, firm, and workplace levels. Part 1 focuses on recent changes in market regulation and the structure of competition in the German telecommunications industry. Part 2 discusses the effects that these changes have had on collective bargaining structures and union responses. Part 3 compares employment systems in core technician and customer service and sales jobs at Deutsche Telekom and its largest competitors. Part 4 examines the ways in which organizational restructuring, including outsourcing and new subsidiary strategies, is affecting job quality and labor market segmentation. Findings are based on over 150 interviews with union and works council representatives, managers, and employees conducted between 2003 and 2007; as well as secondary analysis of company documents and industry reports.

1. Market Liberalization and Industry Restructuring

Deutsche Telekom (DT) remained a publicly owned company throughout the 1980s and 1990s, retaining its monopolies in long distance and local phone services as well as the growing mobile, internet, and cable markets. Deregulation and privatization initially occurred through a drawn-out series of legislative reforms guided by long and difficult negotiations among well organized interests. Post Reform I went into effect in 1989 and separated the postal service, the post bank, and telecommunications services. Mobile and satellite communications were opened to limited competition, but DT maintained its monopoly over network services. In 1993, the European Council passed a directive calling for member states to eliminate the monopoly on network infrastructure and voice telephony services by 1998. Germany responded with Post Reform II in 1995, which lay the groundwork for privatization of telecommunications and postal services. The DBP-controlled postal service, post bank, and telecommunications services were converted to private corporations, and the Deutsche Telekom AG was established as a joint-stock company with 100 percent state ownership.

Despite these changes, by the mid-1990s DT still controlled around 90 percent of the data services market and 90 to 95 percent of the cable TV network (Darbishire 1997: 195). DT also benefited from 'asymmetrical' regulation that gave the company a number of advantages, with low incentive price regulation and few limitations on cross subsidization or market entry (Darbishire, 1997: 195-196). This changed in 1998, when legislation came into effect that ended DT's remaining monopolies and placed new restrictions on DT with the aim of curbing its market power. Almost overnight, the German telecommunications market shifted from one of the most protected to one of the most liberalized in the world. National network operators like Mannesmann Arcor and o.tel.o and smaller utilities and city carriers like Net Cologne or Worldcom/MFS expanded their own competing network infrastructure, targeting lucrative urban and corporate networks markets. Service providers or resellers benefited from new rules that allowed them to sell network capacity from Deutsche Telekom at lower rates.[1] Intensified price competition in fixed network communications led to declining call charges, which fell more than 60 percent between 1998 and 2000, representing 'the steepest cuts in any European market for years' (Althaus 2000). By 2006, prices in the international calls segment had declined to around 3 percent of the cost before liberalization (Bundesnetzagentur 2006: 76).

At the same time, DT management became increasingly focused on raising the company's lagging share price. In 1996, DT made an initial public offering (IPO) and one million private investors purchased 26 percent of its stock. State ownership was further eroded following second and third public offerings in 1999 and 2000. By 2004, 26 percent of shares were directly held by the federal government, with 17 percent held by the federal Loan Bank for Reconstruction. Meanwhile, the price of DT shares fell to over 90 percent of their peak by 2002 (Economist 2002), putting additional pressure on the firm.

Despite these changes, the German telecommunications market continued to be influenced by its distinctive institutions and development trajectory. DT was able to maintain its diversified corporate structure and monopoly power, which have allowed it to remain the dominant provider across core market segments as well as in the growing multi-media services market. It has been accused of using judicial review to delay or block unfavorable regulatory decisions and leveraging its market power to delay provision of leased lines and to introduce artificially low ‘dumping prices’ in certain markets, such as DSL (OECD 2004: 59-60). More recently, DT lobbied Germany’s coalition government to exempt new investments in its high speed fiber-optic network, VDSL, from regulation – allowing it to prevent competitors from using this network for a fixed period. In 2006, the Bundesnetzagentur, backed by the EU, required DT to offer local loop unbundling on the network; however, in February 2007 a new clause in the German Telecommunications Act came into effect that exempted new markets from regulation. The EU Commission has instituted breach-of-contract proceedings, arguing that these provisions conflict with the EU’s legal framework. At the time of writing, this conflict had not yet been resolved.

DT’s role in developing Germany’s telecommunications infrastructure also has given it a sustained competitive advantage in high-speed internet services. The company did not invest in a competing cable network for voice and internet, instead promoting DSL services and expansion of its high speed integrated services digital network (ISDN). DT was forced to sell majority stakes in its nine regional cable companies in 2000, following the Cable Directive. However, DT temporarily retained a ‘25 percent plus one vote’ share in each of these companies, which gave it veto rights over major restructuring decisions. In addition, the direct customer connections continue to be owned and operated by a large number of small private companies, which has made it both complex and expensive for the large cable operators to invest in upgrading their infrastructure. As a result, the cable network has not become a major competing source of broadband services, as it has in the US and the UK.[2]

Finally, the German telecommunications market has been relatively stable compared to that of other countries. DT suffered from plummeting share price and revenue losses until 2003 when it finally managed to turn a profit. Rapid growth after liberalization gave way to consolidation and tighter margins in the early 2000s. However, these growing pains were relatively minor compared to the accounting scandals, overbuilding of capacity, and plummeting share price that US telecommunications firms experienced at the end of the 1990s. Despite a shift to a stronger 'shareholder value' orientation, Germany's distinct corporate governance arrangements have continued to provide additional oversight over company finances and investment decisions by banks, institutional investors and employee representatives (Boersch 2007).

These factors protected DT to some extent and allowed the company to maintain a dominant market position in most segments. However, it is increasingly disadvantaged by its high cost structure, large fixed infrastructure investments, and new regulations that seek to curb its monopoly power. While other firms can 'cherry pick,' choosing to concentrate on high value-added market segments, DT has an obligation to provide universal service. The company has a number of social obligations that create additional costs, including its continued employment of *Beamten*, or civil servants, from the Bundespost who enjoy special rights under German law; and a negotiated commitment to train thousands of new apprentices every year.[3] Only 20 percent of apprentices get jobs at DT after completing their training, and thus DT's competitors or subcontractors enjoy spillovers from this investment.

DT has also been slow to enter new, growing market segments. Its fixed network business unit T-Com only began offering internet telephony, or Voice over IP (VoIP), in 2005, long after AOL and Freenet had developed their own services. DT also did not develop a 'Triple Play' of VoIP, internet, and broadband television services until the end of 2006, prompted by the loss of customers to competitors offering bundled services. These innovations were delayed by fears of short-term revenue loss from higher margin traditional telephone services, and implemented only after the online subsidiary T-Online was integrated into the fixed line operations at T-Com. DT is currently suffering revenue losses from the contraction of this segment, due to substitution by mobile communications and, to a lesser degree, internet telephony.[4]

These structural disadvantages and missed investment opportunities are increasingly hurting DT's competitive position. Its share of the telecommunications market fell from 70 percent in 1998 to 61 percent in 1999, and then to 54 percent in 2004; while its share in local telephone services has fallen around 30 percent since 1998.[5] DT's mobile subsidiary T-Mobile controls around 34 percent of the wireless market (See Table 1), which after years of rapid growth has become increasingly saturated and price-competitive. DT also controls around 50 percent of the growing internet market, where it competes with fixed-network and internet service providers such as Arcor, Freenet, Versatel, and Hansenet (See Table 2).[6] In the past few years, DT has faced a more rapid hemorrhaging of customers, which declined by 1.5 million in 2006, and shrinking net profits, which dropped close to 60 percent in the first quarter of 2007.

[INSERT TABLES 1 AND 2 ABOUT HERE]

2. Effects of Restructuring on Industrial Relations

These recent developments in the German telecommunications market have had wide-ranging effects on collective bargaining, both within DT and in the industry as a whole. The Deutsche Postgewerkschaft (DPG) operated as a single-company enterprise union in the Deutsche Bundespost and then at DT, and enjoyed considerable influence over strategic decision-making through its close work with the union-dominated personnel councils and representation on the company's advisory board. In the 1990s, the DPG continued to enjoy close relationships with managers and works councilors. Member density in core areas of the business remained high, at around 70 to 80 percent. Close to 50 percent of the former Bundespost's employees were civil servants (*Beamten*), and thus enjoyed lifetime job security along with other special employment rights.

In 2001 the DPG merged with four other service unions to form the conglomerate union ver.di, but the old leadership was given considerable autonomy within the new union's telecommunications and IT division (*Fachbereich 9*). Union membership remained high in traditional areas of the business, and union and works council representation on the company's supervisory board gave ver.di sustained oversight in strategic decision-making.

However, ver.di has been less successful in organizing new areas of the industry. Because DT was a monopoly, collective bargaining was organized at the enterprise level, and there was no established employers' association or industry-level agreement. The union attempted to establish sectoral bargaining following liberalization, but it was unable to do so for several reasons. First, the DPG, and then ver.di, continued to be viewed as the union of Deutsche Telekom. Local exchange carriers and competing network operators were unwilling to cooperate with the former monopolist or its union, which continued to place a priority on protecting DT's market position; and the employees of these firms were wary of joining a union that represented the interests of a competitor. DT's competitors formed the Association of Telecommunications and Value-Added Service Providers (*VATM*), but membership remains voluntary and the association has not sought to engage in collective bargaining.

Second, the DPG faced competition from other unions as it sought to organize new firms. As firms in the public, metalworking, chemical, and energy sectors diversified into telecommunications and IT, their unions sought to negotiate agreements with these new business units. Today ver.di's agreements outside of DT consist of cable providers formerly owned by DT, such as Kabel Deutschland; and city carriers like NetCologne that had agreements with the former public sector union ötv (See Table 3).

[INSERT TABLE 3 ABOUT HERE]

Organizational restructuring exacerbated the competition among unions, particularly between the metalworking union IG Metall and the new conglomerate service union ver.di. The two unions both negotiated separate agreements with different operating subsidiaries of the DT group's company T-Systems, which was formed when DT's telecommunications and IT service division merged with Debis Systemhaus, a service division of the automaker DaimlerChrysler. DT's major fixed network competitor, Arcor, was formed through the mergers of subsidiaries that had separate agreements with IG Metall, Transnet, and IG BCE. In 2000, the unions formally divided responsibility for new telecommunications and IT companies. However, this has not prevented conflict at a time of declining membership and changing firm boundaries. For example, ver.di had agreed that the mobile phone subsidiary D2 Mannesmann Mobilfunk fell under IG Metall's jurisdiction, but changed their position after the British company Vodafone took over Mannesmann. These jurisdictional conflicts have prevented the unions from developing a coordinated strategy at the industry-level and divided works councils at the company-level.

A third challenge to establishing sectoral bargaining has been the persistence of low union density in new industry segments. Most small service re-sellers and internet service providers have not negotiated union agreements. Larger competitors were either established by international firms that did not have a prior relationship with German unions or by diversified German firms that were reluctant to negotiate new agreements for their telecommunications subsidiaries. D2 Mannesman Mobilfunk began negotiations with IG Metall in the mid-1990s, but did not conclude a collective agreement until 2001, after the company was taken over by Vodafone. Membership has remained low, at around 5 percent, and in some regions works councilors have broken off all ties with the union. Employees at the wireless provider E-plus elected works councils in the late 1990s with ver.di's assistance, but by 2007 union membership still remained low, union affiliation of the works councilors was fragmented, and there had been no progress toward an agreement.

These three factors – distrust by new employers of DT's close relationship with the DPG, competition between unions, and low union membership in new segments – help to explain the continued lack of a sectoral agreement. More surprisingly, the DPG also has not negotiated a common framework agreement for the companies in Deutsche Telekom's corporate group, where the union continues to have a strong and institutionalized bargaining relationship with management. As DT transitioned from a fixed network carrier to a diversified corporate group in the 1990s, the company established independent subsidiaries for different market segments and services. In 2000, the corporate group shifted to a new divisional structure, based on DT's four market 'pillars' of T-Com (fixed network), T-Mobile (wireless), T-Systems (business and IT), and T-Online (internet services). T-Com remained an internal division of the parent company, Deutsche Telekom AG, and thus retained the company's original collective agreement. However, the DPG concluded separate agreements with T-Mobile and T-Systems and was unsuccessful in securing an agreement with T-Online.

Negotiations between ver.di and T-Online ended in 2005 when DT announced that it would bring the subsidiary back into the parent company to take advantage of synergies between internet and network services. At the same time time, the group within T-Com servicing small and medium-sized companies merged with T-System's large business customers group to create a new business customer division. DT has also established a number of subsidiaries that perform cross-divisional management functions or operating activities, and these are either covered by the parent company agreement (often with unique terms) or by separate agreements. Ver.di representatives estimated in 2007 that there were over 100 collective agreements across Deutsche Telekom.

This fragmentation of collective bargaining within DT can be partially explained by the broader developments in the telecommunications industry discussed above. Ver.di membership and works council ties have remained weaker in business units competing in newer market segments: union density is around 70 to 80 percent in the parent company, but is estimated at 10 to 20 percent at T-Mobile and T-Systems and was close to 5 percent in T-Online before it was re-integrated into the parent company. Sako and Jackson (2006: 356-8) provide two additional explanations that are specific to DT. First, the union merger that formed ver.di drained resources and diverted attention from newer DT operations, hampering membership recruitment and allowing works councils in these operations to assume a more central and independent role. Second, pay and working conditions in the new business units were initially better than those at the parent company, as DT sought to encourage employees to accept transfers as well as to attract new employees with technical skills that were in high demand. Works councils and employees in the subsidiaries thus had both the means and the incentive to maintain a structure of separate agreements.

A more basic explanation for fragmentation in collective agreements is connected to DT's unique history of enterprise unionism. Because the DPG focused on one employer, it had established a tradition of formal collective bargaining for a number of topics that are typically included in works agreements in other sectors, such as scheduling practices and variable compensation. As management sought to differentiate practices, union representatives preferred to negotiate separate agreements rather than shift responsibility to works councils through opening clauses. This tradition was a source of labor strength in the 1970s and 80s, based on an unusually close relationship between the works councils and a single-employer union. However, as DT has decentralized its own corporate structure, the formerly close relationships between works councils in different areas of the business have further broken down and both union and works council representatives are responsible for administering increasingly complex collective agreements. The corporate group's works council plays a relatively weak role, dealing primarily with decisions that affect the entire group; while company-level works councils have primary responsibility for negotiating agreements on such matters as work design, job security, and compensation practices that are not covered in agreements with ver.di. As a result, ver.di has found it increasingly difficult to coordinate bargaining and participate in strategic decision-making at the corporate group level.

Figures for membership density and bargaining coverage in the German telecommunications industry are not publicly available, and thus can only be roughly estimated. In 2006, ver.di and works council representatives estimated 70 percent density in Deutsche Telekom's broadband/fixed network operations and headquarters (with around 115,000 employees), an average of 40 percent in DT's other subsidiaries (45,000 employees), and 5 percent in new industry entrants (56,000 employees).[7] Union density was thus at most 47 percent in 2006, falling from an estimated 57 percent in the mid-1990s (Funk 2004). Coverage of employees by firm-level collective bargaining agreements is still high, due to the continued dominance of DT across industry segments. Based on similarly rough calculations, it appears to have fallen from close to 100 percent to around 85 percent.[8] However, these figures do not take into account the large and growing proportion of customer service, sales, and technician jobs performed by third-party subcontractors, which have lower union density and are typically not covered by collective agreements.

In the absence of sectoral bargaining, works councils have assumed central responsibility for negotiating collective agreements in many new workplaces. However, works councils have not built strong working relationships with the union outside of DT's fixed network business. Works councilors at different locations in large firms often do not know each other due to frequent restructuring and membership in company-level works councils changes often as divisions are spun-off and as former competitors merge. Moreover, in diversified firms like Mannesmann or DT, works councils located in different business units often have distinct or conflicting interests (Höpner and Jackson 2003; Sako and Jackson 2006).

Market liberalization and corporate restructuring have thus contributed to the fragmentation of collective bargaining in the telecommunications industry. Today DT faces competition across market segments from firms with weaker or no collective agreements. Meanwhile, ver.di representatives are struggling to develop new approaches to regulating working conditions in a more competitive sector, without the institutional moorings of a sectoral bargaining structure or a common framework agreement at DT.

3. Employment systems

The changes in the German telecommunications market discussed above have encouraged managers to reorganize work and adopt new strategies of performance management. As markets reach saturation, both DT and its competitors are increasingly focused on customer attraction and retention, providing incentives to invest in employee skills and service quality. However, growing price-based competition and declining profit margins create potentially conflicting pressures to reduce labor costs through lean staffing practices and outsourcing strategies. New technologies have increased the complexity of many jobs, but also facilitate rationalization, routing of calls to remote locations, and individual performance monitoring.

Growing fragmentation in industrial relations and more differentiated markets provide greater scope for managers to exercise strategic choice. At the same time, large firms continue to have elected works councils, which enjoy strong co-determination and consultation rights. Most telecommunications employees also continue to receive vocational training through the German 'dual' apprenticeship system, in which employers hire apprentices in a particular trade at a lower rate of pay and partially fund their classroom training. This, in turn, affects overall skill levels and skill transferability, as well as professional or occupational identity.

In the following sections, I examine how these institutions have influenced employment practices in two major areas of telecommunications employment: technicians and customer service and sales workers. The summary here draws primarily on case study data from Deutsche Telekom's two largest business units, T-Com (fixed-lined) and T-Mobile (wireless); and by two of its major competitors, Arcor (fixed-line) and Vodafone Germany (wireless) – both of which are owned by the British multinational Vodafone.

Technicians. Technicians are responsible for constructing and maintaining networks, both for private customers and large businesses; as well as installing and repairing lines and services. DT owns most of Germany's infrastructure (83 percent of telephone channels in 2006), which is then leased or resold by competitors; and its technicians are responsible for maintaining and servicing both this fixed network and a large proportion of Germany's wireless network. Even where competitors own their own network, DT typically services the 'last mile' or connection between the distribution point and the customer.

DT's technicians have traditionally been organized on a regional basis, with responsibility for maintaining both the fixed and wireless network infrastructure. There are four main job categories: Monteur handle simple connections and product assembly; Service Monteur/Techniker are responsible for maintenance and repair; and Service Techniker Spezial build and maintain large business networks. Almost all of these employees have completed apprenticeship training in the Systemelektroniker/in trade; and most received their training at DT.

Technicians responsible for installation, maintenance, and repair (Technische Aussendienst) represent the largest group of technical employees at DT. The organization of these jobs changed over the 1990s, due to new technologies facilitating tracking and distribution of jobs. Previously supervisors would meet employees each morning to distribute assignments; while today all job assignments are allocated over the internet through personal laptops. Employees primarily work alone, meeting with 'virtual teams' of 17 to 20 technicians at least once a month to discuss team goals and to receive training on new products. DT has introduced team competitions, but these are optional and have not been attached to bonuses, pay at risk, or disciplinary measures. Employees also have working time accounts and flexible working hours, allowing them to start up to half an hour early and to work up to 10 hours per day. Additional hours are accumulated in their account, and technicians negotiate individual plans with team leaders for 'drawing down' this account by the end of the year through reduced hours.

All of these changes were negotiated with strong works councils, which have resisted the introduction of pay-at-risk and ensured that individual technicians maintain broad control over their working time arrangements.

DT's technicians have thus traditionally enjoyed considerable autonomy, with few substantive consequences or incentives attached to meeting performance goals. However, this is changing. DT is introducing GPS tracking systems, and is in negotiations with its works councils over whether this technology can be used to monitor the movements of individual technicians. A recent collective agreement with ver.di will introduce 15 percent pay at risk for the first time, and management is also seeking to change works agreements that specify that supervisors can only look at team results to facilitate individual performance evaluation. According to a recent ver.di agreement, the time employees spend driving to their first assignment and home from their last assignment will not be included in employees' official working hours, which will increase actual working hours for technicians in several regions. At the same time, works councilors felt that it would be difficult for managers to implement unilateral changes in these areas, and were optimistic that compromises could be reached.

Customer Service and Sales. Service and sales jobs – primarily in retail stores and call centers – have become more important as a strategic channel for attracting and retaining customers. These jobs are expanding at all telecommunications companies, but make up a larger proportion of employment at DT's major competitors, particularly among service resellers that do not maintain their own infrastructure.

Formal vocational training continues to be important for recruitment and promotion in service and sales jobs, although this varies across firms. DT offers an apprenticeship in retail sales, or 'Kaufleute im Einzelhandel,' in its retail subsidiary T-Punkt, which represents 16 percent of its total apprentice places. While other firms offer this training, they do so at a lower rate, and typically adjust the number of new apprentice places based on their recruitment needs. Call center agents at DT traditionally completed the apprenticeship training 'Kaufleute für Bürokommunikation' (Management Assistant in Office Communications), which was not specific to call centers, thus offering mobility to other jobs in the company and sector. Its competitors and call center subcontractors, in contrast, tended to recruit employees from a variety of backgrounds, with a heavy reliance on students; and many did not fund apprenticeship training. In 2006, a new call center apprenticeship, 'Kaufleute für Dialogmarketing,' was negotiated between ver.di, the DGB, and the employers' organization Kuratorium der Deutschen Wirtschaft für Berufsbildung (KWB), with the cooperation of several large call center vendors. According to union representatives, close to 90 percent of training for the new apprenticeship takes part in the firm, making it less costly than other apprenticeship courses that involve more extensive classroom training. Employers have argued that the new apprenticeship will help to raise the status of call center work and improve skill portability. However, union and works council representatives at DT felt it represented a devaluing of the broad skills provided in the previous Kaufleute apprenticeship, and would serve to further segregate call center agents and reduce mobility within DT.

Call centers have also been a central focus of work reorganization measures. New technologies have made it easier to route calls between remote locations and to subcontractors, match agent availability with fluctuating call volume, and monitor agent performance. These jobs also represent a large proportion of employment, averaging around 30 percent of jobs in the largest companies, and thus provide an obvious target for reducing labor costs. Although the companies studied here –T-Com, T-Mobile, Arcor, and Vodafone – have adopted different practices, all four have moved towards a similar employment system that relies on worker skill and discretion to improve flexibility and motivation.

First, all four companies have trained employees to handle a variety of call types. In 1999, T-Com retrained agents to handle a range of billing, sales, complaints, telemarketing, and service calls. T-Mobile also gradually reduced specializations, although maintaining dedicated groups for high- and low-value customer segments. Arcor and Vodafone had more specializations, but pay and working conditions were not differentiated based on call type and mobility across jobs was high. These changes increased the complexity of call center jobs, in some cases allowing union representatives to argue for increased pay; were associated with low wage spread; and allowed managers to distribute calls more flexibly between locations and agent groups.

Second, all of the companies adopted scheduling arrangements that provided managers with more flexibility to adjust employment levels to daily and seasonal fluctuations in call volume, while giving workers some control over their working time. T-Com and T-Mobile negotiated working time accounts with their works councils in the early 2000s, which allowed employees to build up hours in their accounts when call volume was high, and then draw down those hours when they needed extra time off. Employee control over these arrangements was strongest at T-Com: works agreements specified that team leaders could not force agents to work overtime or prevent agents from leaving when they chose if they had sufficient ‘plus’ hours. As a result, team leaders relied on maintaining a good relationship with their team to avoid staffing problems. Arcor and Vodafone did not have working time accounts, but this was in part due to works councils’ perception that managers would take advantage of these arrangements. At Arcor, the works council had gradually improved scheduling predictability and helped individual workers to secure favorable shifts based on needs such as child care; while Vodafone employees were able to refuse requests by managers to change their shifts.

Third, new performance management practices focused on ‘soft’ forms of motivation through coaching and training rather than discipline and dismissals. Works councils placed strict, negotiated limits on individual monitoring and incentives. These limits were strongest at T-Com and T-Mobile, where works agreements prohibited managers from recording individual performance metrics, disciplining individual workers based on their performance, or basing variable pay on individual sales goals. At Arcor, works agreements also prohibited individual monitoring, with the exception of call length; and ‘mystery calls’ evaluating service quality were reported only at the team level. Vodafone allowed mystery calls to be reported at the agent level, but individual results were only available to several ‘trainers’ at each center who could only use this data to give employees feedback and coaching. Coaching was described by managers and works councilors as a negotiation rather than evaluation, as team leaders were restricted in threatening hard consequences, such as dismissal, to poor performers.

Fourth, all four companies adopted team-based work organization and incentives – encouraged in large part by these negotiated limits on individual monitoring. At T-Com and T-Mobile, evaluations of team performance determined the distribution of variable pay. At T-Com, this was overseen by a committee at each workplace with an equal number of employee and employer representatives. In addition, sales goals for each team were incorporated into a collective agreement, and employees were able to appeal these goals before a joint committee. Teams at Arcor's call centers were responsible for providing 'team reports' that identified group goals and suggestions for improving systems. Employees in each team were assigned a coaching role, and variable pay was distributed by team leaders as a bonus on top of base pay. At Vodafone, teams had weekly and monthly sales goals, and managers organized special team competitions and bonuses. At all of the firms, there was a strong focus on building 'team spirit', with regular team meetings, workshops, and training sessions, as well as activities planned together outside of work.

These employment practices reinforced one another: limits on monitoring, combined with broad employee control over their working time, made it difficult to pursue individualized, discipline-based strategies for motivating workers. Employees adopted a more professional attitude towards their jobs, encouraged by their broad autonomy and often a strong 'occupational identity' fostered by apprenticeship training in a sales or administrative profession. Works councils played an important role in placing these negotiated limits on the possible range of management practices, as well as ensuring some fairness in the implementation of new incentives such as variable pay.

Participatory practices were further supported by high and uniform wage levels and job security, secured through collective bargaining with ver.di at DT and IG Metall at Arcor and Vodafone. Union agreements were strongest at T-Com, with higher pay across call center jobs and provisions that made it virtually impossible to lay off workers. However, union agreements at the other companies had also helped to reduce internal inequality and raise overall pay, collapsing often complicated structures of individual contracts and varied pay grades that were the legacy of mergers and spin-offs into a more simple structure with less variation. For example, Arcor was formed by a series of mergers between o.tel.o, germany.net, and a number of smaller city carriers. In 2003, IG Metall and Transnet finally concluded a collective agreement for the company's new call center subsidiary that collapsed 16 different employment contracts from these mergers into two contracts, while ensuring that no employees were assigned a lower pay grade.

4. Organizational restructuring

The above discussion suggests that worker representatives continue to play an important role in encouraging German telecommunications employers to invest in employment systems that rely on worker skills and involvement for improving productivity. However, in recent years, employers have also adopted a parallel set of externalization strategies that allow them to differentiate these systems across their production network. Outsourcing and subsidiary strategies are two increasingly popular organizational restructuring measures that involve shifting some portion of core work – or, alternatively, entire departments or establishments – to a different 'owner,' thus entailing a renegotiation of employment contracts and collective bargaining agreements. These organizational changes contribute to increased variation in pay and working conditions and declining coordination between works councils across establishments.[9]

Outsourcing. Large telecommunications firms rely on third-party subcontractors to perform technician, retail, and call center work. DT traditionally used subcontractors to handle peaks in demand for technicians, but increasingly uses them for regular work. For example, in Nordrhein-Westfallen, the company's largest administrative region, DT employs 1,800 in-house technicians and 1,200 external technicians through its subcontractors. These subcontractors are used primarily to handle simple jobs, such as installation; are not used for large business accounts; and are more likely to be assigned to jobs ordered from competitors who resell services on DT's network.

The organization of retail establishments is more decentralized: large firms typically both own their own retail stores and rely on franchises or third-party chain stores to sell products and services. DT owns 600 stores employing over 4,000 sales workers. These were moved to a subsidiary, 'T-Punkt,' in 2004, but the new company is covered by a collective agreement and primarily employs workers with apprenticeship training in retail sales. Employment is less regulated in the third-party stores that sell DT services, which are not covered by the DT agreement and tend to recruit more students or other employee groups that lack formal qualifications. Vodafone Germany owns 240 of its own stores, but has over 1,000 franchises, or 'partner stores,' that employ close to 3,000 employees and are not covered by Vodafone's collective agreement with IG Metall.

A similar trend can be seen in call center operations. Several companies, including T-Online and the mobile provider E-plus, have outsourced a majority or all of their call center work; while others outsource peaks in call volume or certain lower-skilled jobs such as operator services. T-Com outsourced most of its directory assistance jobs in the late 1990s and T-Mobile gradually increased the outsourcing of calls during late hours, peak times, vacations, night shifts, and outbound campaigns. By 2007, according to DT works councilors, around 7,000 of T-Com's call center jobs were performed by subcontractors. During this same time period, Arcor increased outsourcing of call volume peaks, late nights, outbound campaigns, and all directory assistance work. Union officials estimated that close to 90 percent of Arcor's 'simple' or transactional call center jobs were carried out externally, while managers retrained the internal workforce to focus on more complex technical service jobs and high value-added customer segments.

Works councils and union representatives initially cooperated with these measures, as they were viewed as a useful escape valve for pressures to reduce labor costs or extend service to unsocial working hours (Doellgast and Greer 2007). For example, in 2000, Vodafone's works council agreed to allow management outsource peaks in call volume and some telemarketing campaigns in exchange for strong job security protections. However, outsourcing often created new and unexpected pressures. Vodafone began to outsource all new growth in call volume rather than expand employment in-house. In-house workers are benchmarked against subcontractors, increasing pressure on works councilors to improve productivity and allow more individual performance monitoring. Ver.di negotiated a special agreement in 2006 with

T-Mobile that included pay at risk and reduced starting pay for new hires in call centers, following an emotional campaign in which management threatened to outsource all customer service jobs if the agreement was not accepted.

The growing use of subcontractors for formerly core telecommunications jobs has moved thousands of these jobs to companies that are typically not covered by union agreements. Only one large call center subcontractor, Walter Telemedien, had signed an agreement with ver.di, and this was considerably weaker than those that covered the workers of their major clients, including DT. While large subcontractors often have works councils, they tend to be newer, to have weaker relationships with unions, and to have little contact with the works councils of client companies. These companies also typically pay lower wages, monitor work more intensively, demand greater scheduling flexibility from their workers, and rely more heavily on commission and pay at risk.

Subsidiary strategies. An alternative set of restructuring measures involves moving internal departments or entire job categories to subsidiaries. Similar to outsourcing, this constitutes a change in ownership, allowing firms to re-negotiate collective agreements. Deutsche Telekom has been most aggressive in adopting this strategy – due in part to its size and limitations on other forms of externalization from strong job security agreements.

In March 2004, DT established two new subsidiaries, Vivento Customer Services (VCS) and Vivento Technical Services (VTS), to handle lower skilled call center and technical support work across DT's companies, as well as to provide subcontracted services to external clients. These new businesses were formed due to DT's unique employment commitments. Between 1995 and 2004, Deutsche Telekom cut 110,000 positions in its core operations, largely through early retirement, voluntary buy-outs, and natural turnover. Redundant employees who could not be accommodated through these measures were moved into Vivento Personal Service Agentur (PSA), a ‘temporary employment and qualification company’ or *Beschäftigungsgesellschaft* created in 2002 that was intended to place employees in short-term assignments within and outside DT. By 2003, Vivento PSA had grown to close to 20,000 employees, who DT was obligated to maintain at their former pay level.

VCS and VTS were established to target new markets using this surplus workforce, and over 4,000 employees were moved to the two subsidiaries from Vivento PSA. Under the 2004 collective agreement, the new subsidiaries remained under the DT agreement, although pay was reduced to 91.25 percent of employees’ former salaries. While employees transferred from other DT companies were able to keep their employment contracts, new employees were hired under less favorable terms. For example, the starting monthly salary at VTS was 1,900 Euros in 2006 compared to 2,300 Euros for T-Com’s in-house technicians. By 2007, DT was contracting a portion of its ‘outsourced’ call center and technical service work to VCS and VTS.

Ver.di representatives were initially optimistic that the creation of the new Vivento companies would allow the company to in-source thousands of jobs that had been outsourced to vendors. However, management soon made it clear that it intended to sell these subsidiaries to different vendors. In 2006, DT transferred five of its 19 VCS locations, representing around 700 employees, to the subcontractors Walter Telemedien and Arvato. Employees’ pay and working conditions were secured through 2008, but after that time the new employers will seek to renegotiate contracts at a level that are more in line with standards in the call center vendor industry.

Then, in 2007, DT announced plans to shift 50,000 of its technical service, technical infrastructure, and call center jobs into three new subsidiaries, under the name of 'T-Service,' and demanded the renegotiation of pay and working conditions. Ver.di led a six week strike – the first in the history of the company – with strong support from its membership. Under the agreement eventually reached by both parties, wage levels for current employees will be reduced by 6.5 percent over 42 months and working time will increase from 34 to 38 weeks without pay compensation, amounting to more than a 10 percent overall reduction in compensation. In addition, new employees will earn 30 percent below the current level; the use of variable pay will increase, with 15 percent of base pay tied to DT's organizational performance and individual and team performance targets; and the regular working week will now include Saturdays in call center operations. Management agreed to extend job security until 2012, to not sell the new service subsidiaries until 2010, and to offer 4,150 jobs at T-Service to DT apprentices.

An important factor in ver.di's decision to return to negotiations was management's threat to transfer employees to the new companies without a collective agreement, which it had the right to carry through under German law. This less favorable outcome was avoided. However, differences in pay and working conditions will increase between divisions and between current and new employees. In addition, works councils with different cultures will be obligated to develop a new structure for decision-making and communication. Call center jobs from both T-Com and T-Mobile will be moved into the new customer service subsidiary – and while T-Com's works councils are organized on a regional basis and dominated by ver.di members, T-Mobile's works councils have a workplace-based structure and weaker links to ver.di. Works councilors anticipate that integrating these different cultures will generate conflict in the short-term and divert resources from negotiations over substantial planned changes in work organization.

Conclusions

The liberalization of the German telecommunications market in the 1990s has contributed to the fragmentation of collective bargaining, the decline of union bargaining power, and growing variation in employment systems within and across firms. These developments are particularly striking when measured against the industry's recent history of centralized and coordinated bargaining. The DPG and DT's works councils relied on these institutions to preserve their influence over strategic decision-making and regulatory reform, which allowed them to guide incremental adjustment to new technologies and more competitive markets in the 1980s and 1990s (Darbishire 1997).

This institutional advantage quickly unraveled following new regulations that encouraged competition across segments, led by firms with weaker or no union agreements. While the DPG and now ver.di have sought to establish closer relationships with works councils in new firms, they face considerable obstacles from lack of interest or cooperation from new employers, competition between unions, and low membership density in new industry segments. Today, collective bargaining in the German telecommunications industry occurs at the company level, even within the DT corporate group; while works councils have displaced unions as the primary, or only, form of collective representation in DT's competitors. Meanwhile, managers are reorienting their competitive strategies to growing price-based competition, more differentiated markets, and increased pressure to maximize shareholder value. These trends have transformed many of the distinctive institutions that were viewed as supports for DT's past 'labor-mediated' restructuring strategies (Darbishire 1997).

Findings contribute to contemporary debates on stability or change in Germany's 'coordinated' institutions (Kitschelt and Streeck 2004; Streeck and Thelen 2005). Based on research in German manufacturing workplaces in the 1980s, Streeck (1991) and Turner (1991) argued that sectoral bargaining with strong unions, workplace level co-determination, and vocational training emphasizing polyvalent skills provided productive constraints on firms that promoted social peace while enhancing corporate performance. More recent research on national varieties of capitalism has further emphasized the complementarity between these institutions and Germany's distinctive bank-based finance and stakeholder corporate governance arrangements. Hall and Soskice (2001), among others, have argued that German firms rely on non-market forms of coordination to sustain competitive advantage in high quality markets, giving employers incentives to cooperate with coordinating institutions.

Recent evidence suggests that broad trends of internationalization and liberalization of markets are undermining these advantages and constraints. German firms are orienting themselves toward the interests of shareholders, in response to the growing proportion of individual shareholders and shareholder activism by international institutional investors (Höpner 2003). Union density and bargaining coverage have declined across sectors, employers associations are losing members, and concessionary plant-level bargaining has increased (see, e.g. Doellgast and Greer 2007: 57-58). These developments raise the question of how (if at all) persistent differences in national institutions influence firms' strategic choices under conditions of market liberalization and declining union power.

Telecommunications provides an important case study for examining the role of relatively 'sticky' collective bargaining arrangements in large firms as they face increased price-based competition and enjoy growing opportunities to escape existing constraints on managerial prerogative. If the maintenance of strong industrial relations institutions depends on their complementarity with quality-focused competitive strategies, we might expect employer defection from these arrangements in the face of new pressures. At the same time, firms may continue to benefit from strong coordinating institutions, particularly as they seek to gain worker acceptance for, and cooperation with, new measures that radically reorganize core jobs.

Recent developments in the German telecommunications industry suggest that national industrial relations and vocational training institutions continue to play an important, but increasingly circumscribed, role in shaping management strategy and worker outcomes. First, for large employers' in-house workforce, national labor laws provide distinct forms of bargaining power in negotiations over work reorganization. Works councils' co-determination rights have allowed them to substantively participate in decisions concerning compensation, work design, performance management, and scheduling, encouraging management to adopt employment practices that rely on worker skill and participation while safeguarding discretion. Employers, in turn, have benefited from the cooperation of worker representatives with new employment systems that provided both flexibility and high levels of worker effort and commitment.

However, a second trend of organizational restructuring through outsourcing and subsidiary strategies means that these favorable terms are increasingly circumscribed to a shrinking group of core workers. Even within Deutsche Telekom, the use of subcontractors has increased and the shift in the locus of collective bargaining to the company-level has contributed to the increased variation in employment systems within the corporate group. DT's recent decision to establish separate service subsidiaries with lower pay scales and increased pay at risk will exacerbate these differences. Works councils' ability to build countervailing power depends on their success at establishing and maintaining coordinated bargaining structures within large firms and across their increasingly decentralized production chains. Absent strong unions and centralized bargaining, the likelihood is greater that competition between locations for investment will undermine works councils' ability to maintain strong agreements that preserve high pay and broad employee discretion.

Table 1: Major wireless providers (2006)

Wireless Providers	Ownership	Subscribers (Millions)	% of Total Subscribers	Revenue (Billions of €)	Number of Employees	Union agreement
T-Mobile	DT (Germany)	34.3	38%	8.2	5,700	ver.di
Vodafone	Vodafone (UK)	31.6	35%	8.0	9,000	IG Metall
E-plus	KPN Mobile (Netherlands)	13.6	15%	2.9	2,200	None
o2	Telefónica (Spain)	11.6	13%	2.8	4,700	IG BCE

Source: Company web sites, annual reports, and interviews. Subscriber numbers reflect current as of June 2007; Revenue and Employees from end of 2006

Table 2: Major fixed-line providers (2006)

Provider	Ownership	DSL subscribers (Thousands)	Voice subscribers (Thousands)	Revenue (Millions of €)	Number of Employees	Union agreement
T-Com	DT (Germany)	10,300	42,200	21,835	86,315	ver.di
Arcor	Vodafone (UK)	2,081	2,100	2,126	3,735	Transnet/ IG Metall
Freenet	Freenet (Germany)	1,000	3,040	2,055	3,646	None
Versatel	Versatel (Germany)	503	90	666	1,395	ver.di

Source: Company web sites, annual reports, and interviews. Subscriber numbers reflect current as of June 2007; Revenue and Employees from end of 2006

Table 3: Selected company agreements in telecommunications, 2006

Responsible trade union	Company agreement
Transport, Service and Networks Union (Transport, Service, Netze -- **Transnet**)	Arcor
Chemicals, Energy and Mining Union (Industriegewerkschaft Bergbau Chemie Energie -- **IG BCE**)	O2, British Telecom
Metalworkers' Union (Industriegewerkschaft Metall -- **IG Metall**)	Vodafone, Arcor
Service Employees' Union (Vereintedienstleistungsgewerkschaft -- **ver.di**)	Deutsche Telekom (*Deutsche Telekom AG, T-Mobile, T-Systems Business Services, T-Systems Enterprise Services, Vivento Customer Services, Vivento Technical Services, T-Punkt, DeTeImmobilien, T-Service, and other agreements for smaller subsidiaries*); Versatel, EWE TEL, NetCologne, DOKom, Kabel Deutschland, Kabel Baden-Württemberg

Works Cited

Althaus, Sarah. 2000. Deutsche Telekom Income Falls 45%. The Financial Times, January 21, 2000, 26.

Batt, Rosemary, and Owen Darbishire. 1997. "Institutional determinants of deregulation and restructuring in telecommunications: Britain, Germany and the United States Compared." International Contributions to Labour Studies 7:59-79.

Boersch, Alexander. 2007. Global Pressure, National System: How German Corporate Governance is Changing. Ithaca, NY: Cornell University Press.

Bundesnetzagentur. Jahresbericht 2006 [cited August 2007.

Darbishire, Owen. 1997. Germany. In Telecommunications: Restructuring Work and Employment Relations Worldwide, edited by H. C. Katz, 189-227. Ithaca: ILR Press.

———. 2005. Radical Restructuring: The Transformation of Industrial Relations in the Telecommunications Industry. Dissertation, Industrial and Labor Relations, Cornell University, Ithaca, NY.

Doellgast, Virginia. Forthcoming. "The new politics of restructuring: National industrial relations and local bargaining power in the US and German telecommunications industries." European Journal of Industrial Relations.

Doellgast, Virginia, and Ian Greer. 2007. "Vertical Disintegration and the Disorganization of German Industrial Relations." British Journal of Industrial Relations 45 (1):55-76.

Economist, The. 2002. Ringing the changes. Economist.com/ Global Agenda, July 18, 2002, 1.

Eurobarometer. 2007. "E-Communications Haushaltsumfrage, Eurobarometer Spezial No. 274 – TNS Opinion & Social, April 2007."

Funk, Lothar. Questionnaire for EIRO comparative study on industrial relations in the public sector, focusing on the public utilities - Case of Germany. European Industrial Relations Observatory (EIRO) 2004 [cited October 23, 2005. Available from http://www.eiro.eurofound.ie/2005/02/word/de0411105s.doc.

Hall, Peter A., and David Soskice, eds. 2001. Varieties of Capitalism: The Institutional Foundations of Comparative Advantage. Oxford: Oxford University Press.

Höpner, Martin. 2003. Wer Beherrscht die Unternehmen? Shareholder Value, Managerherrschaft und Mitbestimmung in Deutschland. Frankfurt: Campus Verlag.

Höpner, Martin, and Gregory Jackson. 2003. Entsteht ein Markt für Unternehmenskontrolle? Der Fall Mannesmann. In Alle Macht dem Markt? Fallstudien zur Abwicklung der Deutschland AG, edited by W. Streeck and M. Höpner, 147-168. Frankfurt: Campus Verlag.

Katz, Harry C., ed. 1997. Telecommunications: Restructuring Work and Employment Relations Worldwide. Ithaca, NY: ILR Press.

Katz, Harry, and Owen Darbishire. 2000. Converging Divergences. Ithaca: ILR Press.

OECD. 2004. Regulatory Reform in Telecommunications. In OECD Reviews of Regulatory Reform -- Regulatory Reform in Germany.

———. 2007. OECD Broadband Statistics to December 2006. Review of Reviewed Item. OECD Directorate for Science, Technology and Industry,

http://www.oecd.org/document/7/0,3343,en_2649_34225_38446855_1_1_1_1,00.html.
Sako, Mari, and Gregory Jackson. 2006. "Strategy Meets Institutions: The Transformation of Labor Relations at Deutsche Telekom and NTT." Industrial and Labor Relations Review 59 (3):347-366.
Streeck, Wolfgang. 1991. On the Institutional Conditions of Diversified Quality Production. In Beyond Keynesianism: The Socio-Economics of Production and Full Employment, edited by E. Matzner and W. Streeck, 21-61. Aldershot: Edward Elgar Publishing.
Telekom, Deutsche. 1999. Deutsche Telekom AG Annual Report.
———. 2004. Deutsche Telekom AG Annual Report.
———. 2006. Deutsche Telekom AG Annual Report.
Turner, Lowell. 1991. Democracy at Work: Changing World Markets and the Future of Labor Unions. Ithaca: Cornell University Press.

Endnotes

[1] By the end of 1998 there were already over 120 licenses for voice telephony. By the end of 1999, 262 licenses for voice telephony services had been awarded to operators with their own networks and 365 licenses for transmission lines, with a total of 1,700 companies providing telecommunications services in Germany. In 2004, the number of licensees had grown to 875 with around 2,200 telecommunications companies. (Deutsche Telekom Annual Reports, 1999; 2004)

[2] In Germany, only 0.5 percent of residents subscribed to cable broadband services and 16.4 percent to DSL; while in the US, 10.3 percent subscribe to cable broadband and only 8.5 percent to DSL (OECD 2007)

[3] Deutsche Telekom employed 12,000 apprentices in 2006, with a regular workforce of 159,992 – thus, apprentices represented close to 8% of employment. In comparison, Vodafone offered 300 apprentice positions with a regular workforce of 9,000, representing just 3% of employment.

[4] According to the German telecommunications association BITKOM, revenues from voice services were declining by 1 billion Euros per year by 2006. German companies generated 4.5% less revenues from fixed-line calls, while the mobile communications market grew by 2% (DT Annual Report, 2006: 81). In 2006, 10% of German households had a mobile phone, but no telephone service (Eurobarometer 2007). The volume of calls has changed, as well: in 1999, 92.4% of calls were from fixed networks, and 7.6% from mobile; while in 2006, 77.6% were from fixed networks, 19.2% mobile, 3% VoIP, and 0.2% cable (Bundesnetzagentur 2006: 65).

[5] DT's competitors accounted for 48% of 'call minutes' in 2006 (Bundesnetzagentur 2006: 64). However, DT continued to own and operate 83% of telephone channels (Bundesnetzagentur 2006: 58)

[6] Although in 2006 DT controlled 50% of the market for end-customers in DSL, Resellers (selling DT's DSL lines under their own name) controlled 23% -- and a large portion of these revenues are returned to DT (Bundesnetzagentur 2006: 61)

[7]DT reports a total of 159,992 employees in its German operations, of which 86,315 employees are in Broadband/Fixed Network (T-Com/T-Home) and 28,188 in Headquarters/Shared Services – leaving 45,489 employees in the company's other subsidiareis (DT annual report, 2006). The Bundesnetzagentur (2006) estimates telecommunications employment in mid-2006 as 55,900 at DT's competitors.

[8] The major telecommunications companies with collective agreements in 2006 included the DT group (159,992 employees), Arcor (3,735 employees), Vodafone (9,000 employees), O2 (4,700), Kabel Deutschland (2,700), Versatel (1,395), EWE TEL (950), NetCologne (700). This represents close to 183,172 employees covered by an agreement, out of total employment of 215,892.

[9] This section summarizes case study material presented in: (Doellgast and Greer 2007; Doellgast Forthcoming)