The hidden history of US public service telecommunications, 1919-1956

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Abstract

Purpose – The aim of this article is to show that US public-service telecommunications, developing through a complex historical process, both engendered and depended on policies that compelled major changes in system development.

Design/methodology/approach – The article contributes to the historiography of US telecommunications, and draws on archival sources and secondary scholarship.

Findings – The article shows that public service policies for telecommunications gradually became dominant, as widespread opposition to AT&T's corporate power gained political traction beginning in the 1930s. Although substantially limited, public service policies came to encompass expansion of service, labor relations, and corporate patents.

Originality/value – The article demonstrates that political conflict and crisis, not consensus, drove policy formation. It also shows that public service principles went far beyond the preferences of AT&T executives.

Keywords: Telecommunications, Patents, Industrial relations, Telephone networks, Public sector organizations, United States of America

Paper type: Research paper

Introduction: the impasse of corporate power

After returning to AT&T in 1907 to take the reins of the US telephone behemoth, President Theodore N. Vail set about addressing the company's most pressing business: to neutralize political opposition to Bell's corporate power. Antagonisms to AT&T had erupted among independent telephone companies and their suppliers, business users, telephone workers, cities, and the general public. The company was threatened by local franchise difficulties and municipalization referenda, federal antitrust proceedings, possibly even nationalization (Schiller, 1998; MacDougall, 2003). Vail's attempted solution was both audacious and multifaceted. While buying out strategically placed independent rivals and placating large business users, he also set about modernizing AT&T's long-distance network to afford a comprehensive nation-wide service (MacDougall, 2005). He undertook to create a systematic corporate research and development function, most immediately to support growth of AT&T's long-distance network but also to support other prospective market initiatives (Reich, 1985). He built up more thoroughgoing financial control over AT&T's numerous local exchange company affiliates, laying the basis for a rationalized and cohesively managed “Bell System” (Garnet, 1985; MacDougall, 2005). Aggressively promoting his company's ostensible commitment to public service (Griese, 2001, pp. 97-104), and acquiescing to regulation by the emerging new state public utility commissions, Vail actualized his strategic goal of turning AT&T into the nation's de facto network manager (Stone, 1991).

The results seemed to validate Vail's vision, as threats to AT&T receded. In the aftermath of the First World War, AT&T became an icon of big business: the country's largest corporation,
and a seemingly perfect exemplar of vertical and horizontal integration. Monopolies within their markets, its local operating companies collectively controlled around three-quarters of the country’s residential telephones (of a total of 30–40 percent of households subscribing during the 1920s). AT&T interconnected its operating companies and a legion of independent service providers across the nation through its long-distance network; and supplied its local- and long-distance units with equipment produced by Western Electric, its captive manufacturing subsidiary. Through Bell Laboratories, AT&T sought to secure its future by means of multifaceted initiatives in science, engineering, and patent policy. This structure not only created seemingly insurmountable barriers to competitive entry, but also granted to AT&T unrivaled power over the course of the telecommunications infrastructure’s development.

Throughout the 15 years after the First World War, on the other hand, the regulatory authority to which AT&T had noisily acceded during the 1910s revealed grave limitations. Nominally equal to AT&T in scope, the Interstate Commerce Commission, a federal regulatory agency charged in 1910 with overseeing telephony, in practice proved all but supine. Public utility commissions, now established in most states, possessed solely an intrastate jurisdiction. Throughout the 1920s, these state commissions did consider standards of service, non-discrimination, and extension of access, and ponder the enigmas of valuation, depreciation, and ratemaking theory. By 1928 a 1,000 page compendium on “public utility service and discrimination” (Nichols, 1928) brought together a stupefying array of detailed case law concerning telephones and telegraphs, alongside other utilities.

Nevertheless, frustration at being unable even to reach vital policy issues was being deeply coded into the experience of state regulators. Obstacles were both numerous and basic, as regulators learned through recurrent engagements with “the telephone company” - frequently, they could not specify exactly how seeming sleights of hand were produced. AT&T had long imposed a hated “license contract” on its operating companies, including a charge of 4 1/2 percent of gross revenues to compensate for its technical and managerial support; it thereby drained revenues out of hundreds of local communities and into the ‘foreign’ corporation’s coffers. AT&T’s Western Electric manufacturing subsidiary availed itself of transfer pricing schemes in its sales of telephone plant and equipment to the carrier’s captive operating companies, again resulting in inflated rates. AT&T’s rapidly growing long distance network afforded additional opportunities for the company to manipulate joint-cost network services to its own advantage. Inflated rates in turn both depressed network access and reduced use among those fortunate to enjoy it. In regard to AT&T’s much-vaunted public service, the gap between legal precept and actual practice thus remained cavernous.

The situation seemed, moreover, to be growing worse. During the 1920s, in three large and politically influential states – New York, Illinois, and California – the Bell System’s repeated rate increase requests, used to support its massive network modernization project, spurred legal battles as obscure as they were torturous. At the same time, AT&T tried aggressively to extend its markets into adjacent fields: radio broadcasting, sound film, business telegraphy, perhaps even musical recording.

A policy impasse seemed to have been reached. State commissions proved both ineffectual and, it sometimes seemed, pliant, in their oversight of the nation’s telephones while, paradoxically, the same commissions seemed all too effective in blocking the systematic exercise of federal power by the Interstate Commerce Commission. In the face of the AT&T juggernaut, regulation seemed a palpable failure.

This protracted stand-off, however, provided direct and indirect inputs to the New Deal reformers who would subsequently redraw the boundaries of power in US telecommunications, and redefine the policy axis on which network system development proceeded. Procedurally speaking, the overall movement was from a more competitive to a more cooperative federalism (Gordon, 2002); substantively, the establishment of a more comprehensive and robust public service regime came at the expense of AT&T. This shift occurred not as an elaboration and confirmation of President Vail’s strategic vision, but as a contingent and contested result of the nation’s unexpected plunge into depression.
Depression and New Deal: investigation and Federal Regulation

The movement to create national political authority sufficient to subject corporate power to what Robert Griffith (1989, p. 58) has called “social discipline” was suddenly strengthened – especially in telecommunications – by the onset of a severe economic crisis and the political openings that crisis helped generate. A new political settlement in telecommunications began to be constructed and, especially at the outset, this initiative appeared likely to subject the industry to radical structural change.

The Depression inflicted a harsh toll on telephone subscribers. During 1930, a decade of rapid network expansion ground to a halt; by spring 1933, subscribers had dropped an estimated 15 percent of the telephones in the USA (McMillen, 1933, pp. 16-17). Local service revenues of the Bell System declined correspondingly – by nearly 15 percent between 1929 and 1932 – while more price-elastic long distance revenues plummeted 41 percent (McMillen, 1933, pp. 20-1).

Responding to the drastic decline in living standards and the Bell System’s unyielding defense of its rates, business and residential consumers began to organize on behalf of cheapened network access (US FCC, 1935-9). Throughout Oklahoma, Illinois, New York, California, Alabama, Washington, DC, Nebraska, Pennsylvania, Minnesota, Georgia, and other states, telephone rates became an object of agitation. McMillen (1933, pp. 78-9) suggested in 1933 that this movement had attained real political momentum: “Consumers’ groups all over the country are organizing to fight for lower rates. Legislatures are making investigations and directing the state commissions to issue reduction orders.”

Though little-studied, consumer movements have sometimes proved capable of making forceful interventions into national telecommunications policymaking (Rhodes, 2006). But persistent consumer organization on behalf of lower telephone rates did not itself produce the desired result. “Despite all these efforts,” concluded McMillen (1933, p. 81) about the upsurge of local agitation, “there were very few rate reductions in telephone service. There has been no general reduction during the depression.” Within the succeeding five years, however, an incoming cohort of New Deal officials would embrace a commitment to stimulating mass consumption – in telecommunications as elsewhere. Eventually – years later – this effort bore fruit.

As Inger Stole (2006, p. xi) underscores, 1930s-era consumer activism may be sharply distinguished from its successors:

This was a far more radical consumer movement . . . Its most militant wing attempted to link middle-class and working-class concerns and tie consumers to producers. For mainstream business interests and political conservatives, this consumer movement was arguably as much a threat to their interests as was the labor movement.

This was, in no small part, because one of the wellsprings of contemporary activism around consumption was the labor movement. Labor’s collective self-organization during the 1930s and 1940s gave new momentum to longstanding struggles to obtain more of the social surplus – of necessities and pleasures both – for the working class. Working-class leisure and the character of working-class cultural consumption had been important political issues since the late nineteenth century and, in Seattle, for example, during the 1910s and 1920s cooperative institutions were forged to leverage working-class purchasing power. Sidney Hillman, president of the Clothing Workers and later a top CIO leader, sought to furnish a pragmatic political footing for precepts of economic redistribution, declaring in 1928 that “A high standard of living is no more a question of mere justice . . . It is essential to our system of mass production to create a consumers’ demand for almost unlimited output” (in Zieger, 1995, p. 15).

The twentieth century’s preeminent historical agency of working-class self-organization – the unions that formed in and around the Congress of Industrial Organizations – likewise expressed a profound policy commitment to upgrading the standard of living even as it also sought to improve the conditions of employment of the U.S. working class. During the late 1930s, CIO-affiliated trade unions aligned themselves with prominent New Deal state managers, creating a coalition that granted political viability to redistributionist tenets now acquiring new legitimacy by parading in the finery of Keynesian economic theory. While
mainstream New Deal politicians dedicated themselves to stabilizing capitalism by using state power to stimulate consumption, however, mobilized trade unionists struggled “to develop a new life of plenty for the people of our own nation”, as the CIO put it in 1944 (Gaer, 1944, p. 89). The CIO became the dynamic driver and organizational hub for a labor agenda that encompassed a prospectively far-reaching revamp of US social and political priorities. The federation’s ambitious “People’s Program for 1944” underlined (Gaer, 1944, p. 199) that to carry forward after the Second World War would require a planning process, through which government should intervene economically to support workers rather than capitalists. For this wider project, Cohen (2004) suggests, product quality would encompass not only safety issues in consumption but also fair labor standards in production.

However broadly defined, consumption issues were not the sole spur to regulatory intervention in telecommunications. Industry employment policies incited additional efforts. AT&T investment in telephone plant, which slowed minimally in 1930, was cut dramatically during 1931 and 1932 (McMillen, 1933, p. 37). Corporate expenses were then reduced by laying off nearly 100,000 workers (exclusive of Western Electric and Bell Laboratories employees) between 1930 and 1932 – 27 percent of the 1929 total – and through mandatory time-off for employees, without which many more layoffs would have occurred (McMillen, 1933, pp. 38, 40; Green, 2001, pp. 160-8). Employee speed-ups and other abuses followed. All this further inflamed public anger against the telephone company, as responsibility for deepening the severity of the Depression via technologically induced unemployment began to be fastened round AT&T’s neck (Bix, 2000, pp. 24-6, 91).

During the 1920s AT&T had commenced on a vigorous program of conversion to automatic, or dial, telephone technology – in some part (Green, 2001, pp. 162-3; Sichter, 1977, p. 31), to free itself from dependence on its unruly women operators. During the 1930s, this transition to a nationally uniform self-service network technology continued. But although the installation of ‘machine switching’ reduced the expense to Bell of operating each subscriber’s telephone, “this decrease is offset . . . by the tremendous increase in investment in plant necessary to give this machine-switching service”, as the New York Public Service Commission explained (New York Public Service Commission, 1930, p. 251); Bell System rate pressure therefore did not slacken. That machine switching compounded the unemployment of the Depression, in addition, now seemed to many not only unjust, but intolerable. “Contrary to popular opinion”, an academic text protested weakly (Herring and Gross, 1936, p. 129), “the dial system does not dispense with operators altogether, since a considerable number are required to handle toll and other special calls . . .” (But Bell was even then planning to minimize these exceptions through further cycles of automation.) Meanwhile, AT&T never reduced its shareholder dividend – a sharp reminder that labor, rather than capital, was bearing the brunt of the Depression, and tinder for arguments (McMillen, 1933, p. 38) in favor of strengthened regulatory intervention.

The sudden salience of a seemingly disparate political issue provided a political opening to would-be reformers. As far back as 1925, electrical power companies had drawn congressional scrutiny; during the late 1920s, hugely publicized scandals engulfed the industry. Its opaque finances and pyramiding ownership structures, as they collapsed, were widely credited with having helped vault the nation into the Depression (Gruening, 1931). Franklin Roosevelt twice made the power industry debacle a campaign issue, first in his successful bid for the governorship of New York State, then in his 1932 presidential campaign. Among FDR’s achievements on moving into the White House was to cut the corporate power of the utilities and to set the industry on a changed structural basis – not only through legislation, bitterly resented by owners, to rein in some of the egregious features of public utility holding companies, but also through a many-sided federal commitment to stimulating electrical usage, not least, through public power: the government-operated Tennessee Valley Authority (McCraw, 1971). Should the telephone, also a public utility industry, be made subject to comparable reforms?

Key leaders of a generation of state regulators, battle-scarred from Bell’s continual defiance, astute in reckoning the weaknesses of the existing regulatory system, and sympathetic to the concerns of residential telephone rate-payers and, sometimes, even to unemployed workers, were prepared by all this to overhaul the nation’s reeling system of provision. Public
opinion was both aroused and concertedly focused; as one contemporary (McMillen, 1933, p. 3; also Hawley, 1995, p. 486) put it: “At present, the public is against its utilities. It is for government ownership, for taxes, lower rates, or anything which will give the utilities trouble.”

A court decision, the outcome of a protracted legal fight between ratepayers and city and state authorities, on one side, and AT&T on the other, provided a point at which to seek formal leverage. In 1930, the Supreme Court had held (Smith v. Illinois, 1930) that the telephone industry was indissolubly based in some part on joint-cost investments; and, specifically, that local plant, whose use the Court held was necessarily shared by local (exchange) and long-distance (inter-exchange) services, occasioned costs which had to be separated for ratemaking purposes between federal and state regulatory jurisdictions. This in turn mandated “the extension of federal regulation into what was formerly an area solely under state authority”, and necessitated establishment of some kind of procedure for cooperative rate-making by state and federal officials. But what agency would represent the interstate interest in the formation of such a mechanism? And what principles would guide its endeavor?

The ICC was both unable and unwilling to take on the job. New Deal institutional creativity, therefore, rapidly reconstituted governmental regulatory authority over telecommunications elsewhere. A flirtation with corporatism through the National Industrial Recovery Administration ended rapidly. Over AT&T’s opposition, the Communications Act of 1934 then established the Federal Communications Commission which, on behalf of Congress, took as its first order of business a specially authorized telephone investigation, to gather the facts needed to undertake a comprehensive reform of system policy and practice.

The telephone investigation, whose history and politics scholars have never explicated, lasted into 1939 and was resisted at every turn by AT&T. Although the nation’s largest corporation succeeded in derailing the more radical proposals generated by this tribunal, its result was to establish federal power over US telecommunications as a permanent and often decisive structural feature. No doubt mindful of their Democratic Party’s fateful political anchorage in an alliance between liberal Northerners and segregationist, states’ rights Southerners, the New Dealers skirted any attempt to ram through a nationwide rationalization plan over the heads of the states. In the context of continuing economic crisis, however, diplomacy engendered a measure of real efficacy.

The FCC drew on one of the most respected state PUC leaders, Paul Walker of Oklahoma, to head up its own regulation of wireline carriers; Commissioner Walker possessed a deep fund of expertise in telecommunications. Other commissioners, plucked from TVA and other utility-related New Deal projects, shared Walker’s conviction that only the deployment of federal power could save the industry from itself. Walker, moreover, was the right person to work with the state commissions without stepping on toes needlessly. The FCC then provided the PUCs with otherwise inaccessible data during its telephone investigation and, later and only with much vexatious effort, established a joint board with the PUCs’ key organization, the National Association of Railway and Utility Commissioners (NARUC) for fact-finding and policy formation. Thereby, a fragmented and incomplete regulatory system moored in the states was transformed into a more collaborative federal-state policymaking mechanism exercising end-to-end oversight nationwide. Tensions of course persisted (they continue to animate today’s discussions of universal service), and AT&T exploited these at every turn; crucially, however, despite AT&T’s intransigence, the New Deal reformers were able to induce substantial changes in the structure and purpose of provision.

In the making was a political settlement whose conception of public service in telecommunications went far beyond anything envisioned by Theodore Vail. Responding both to ascending redistributionist economic precepts and to the political demands of an increasingly militant working class organizing itself through the Congress of Industrial Organizations (CIO), regulators aimed first to stimulate demand for telecommunications by extending network access to as many private households as possible.
Public service: network build-out and rate policy for residential inclusion

Between the end of the Second World War and 1950, the Bell System undertook a modernization program requiring investment of $5 billion (US FCC and NARUC, 1951, p. 17). The number of telephones added each year throughout this interval reached 1.3 million; at the end of December, 1950, there existed 43 million US telephones – an increase of 96 percent over 1940 – and three-quarters of this increase had occurred after the War (Barbash, 1952, p. 154). By the end of 1950, of the nation’s 227 largest exchange areas, possessing a total population of some 64 million persons, only 11 showed a household telephone penetration rate of less than 50 percent; in 69 of these areas four-fifths or more of all households possessed a telephone (US FCC and NARUC, 1951, pp. 21-2).

This sudden massive extension of residential access did not occur simply because (contrary to widespread contemporary prediction) a spectacular economic boom was getting underway; it was not a function merely of more people having money in their pockets. For it could not have come about absent the concrete policies being developed by New Deal regulators to speed the arrival of telephone service to the nation’s households. An array of regulatory innovations, often as arcane as they were hard-won, supported this policy program: long distance rate reductions, government-brokered nation- and state-wide rate-averaging, long-term depreciation allowances, loans to rural telephone service providers, equalizing toll-rate disparities and – decisively – cost-allocation methods that supported broadened household subscribership. Long before comparable progress was made elsewhere around the world, therefore, comprehensive residential telephone access at last began to be realized in the USA. Between 1947 and 1978, Bell system prices overall rose at an annual rate less than half that of the economy’s general price level, while disposable income increased (AT&T, 1980, p. 340). A US Department of Commerce study for the years 1960-1971 demonstrated (Karydes, 1973) that the average American needed to work fewer than 26 hours per year to pay for basic telephone service – the lowest figure among 15 nations studied; by contrast, in France, one needed to labor for 179 hours.

By 1956, an estimated 95 percent of households in Boston had telephones. So did 90 percent of households in Los Angeles, 82 percent of households in New York City, 87 percent of households in Pittsburgh, 88 percent of households in San Francisco, 90 percent of households in Washington, D.C., 83 percent of households in Denver, 94 percent of households in Lincoln, Nebraska, and 84 percent of households in Detroit. Only a swath of southern states still lacked this level of inclusivity. As late as 1948, throughout three heavily African-American regions – the South Atlantic, East South Central and West South Central states – five out of six farms possessed no telephone service. In the urban South, things were beginning to look at least somewhat better. Household telephone penetration in 1956 was estimated at 62 percent in Augusta, GA, 56 percent in Charleston, SC, 62 percent in El Paso, 54 percent in Huntsville, Alabama, 42 percent in Laredo, Texas (US FCC, 1948, p. 3; US FCC, 1956, p. 12).

The swelling residential market for local telephone service shifted the industry’s overall center of gravity. Even as all categories of telephone service expanded, the annual reports of the Federal Communications Commission divulge, the proportion of business to residential telephones fell dramatically. In 1944, this ratio had stood at 57 percent; by 1955, it had dwindled to 43.3 percent, and it would continue to drop until, for around a decade between 1965-75, it stabilized at around 36-37 percent (AT&T, 1980, p. 340). This change did not owe to diminishing business telephone use; to the contrary, industry was making unprecedented attempts to integrate telecommunications-based applications. It was, rather, because residential telephone demand outpaced even business need.

As the state and federal commissions established a coherent national system of public utility regulation, AT&T’s corporate fortunes were bolted increasingly to the provision of service to the mass market of residential users. Between 1945 and 1968, the number of telephones in the USA quadrupled; and, according to a presidential commission, while the overall cost of living rose by 140 percent between 1940 and 1968, total telephone rates (local and interstate) increased by 10 percent (President’s Task Force On Communications Policy, 1968, pp. 6–5). At the same time, through telephone loan programs undertaken – against
the wishes of AT&T – by the Department of Agriculture’s Rural Electrification Administration, remote farm households were connected to the nation’s network.

The trend to enlarged household access, though not without significant limits, constitutes a largely positive benchmark by which to judge the public service settlement. Scrutiny of concurrent changes in the telephone industry’s labor relations allow us to engage more directly some of the ambiguities and limits of that achievement.

Public service: labor and employment

In 1937, during the ravages of the Depression, 320,000 people worked for Bell-controlled companies; but with the Second World War mobilization and the boom that followed, the industry’s work-force doubled and, by 1949, about one out of every 70 non-agricultural and non-governmental employees in the USA was a telephone worker (Danielian, 1939, p. 280; US Congress, 1950, pp. 16-17). As the country’s largest private employer, AT&T was also in a position to act as a potent adversary of organized labor – the more so, once the upsurge of industrial unionism began to affect labor relations in telecommunications. During the 1930s and early 1940s, as Venus Green (2001, p. 165) underlines, Bell system behavior “led many to question whether its employment and economic policies conformed to the standards expected of a public utility.”

Following passage of the National Labor Relations Act in 1935 (often called the Wagner Act, this crucial legislation was upheld by the Supreme Court in 1937) which, among other things, outlawed overt support for company unions (Zieger, 1995, p. 35), AT&T’s employees gradually reasserted their rights to collective bargaining via independent organizations (Green, 2001, pp. 171–3). With a greater measure of government neutrality, even AT&T management’s hostility was insufficient to prevent the coalescence after a bitter seven-week strike in 1947 of a unified national union: the National Federation of Telephone Workers, which then renamed itself the Communications Workers of America. With CIO affiliation in 1949, and increasing worker representation, over the next 25 years the CWA wrested from AT&T national pattern bargaining and a succession of wage hikes and improved benefits. This was a considerable achievement; but it was far from unqualified.

In contrast to what Vorse (1938) called “the growth of a people’s power” via the rapid-fire formation of industrial trade unions throughout basic industry – rubber, steel, auto, mining – the telephone workers did not swiftly arrive at independent self-organization, let alone militant class solidarity. Unionization of telephone workers developed out-of-synch not only with the wider working-class movement, but also with the peak of the New Deal reform coalition’s political efficacy. This chronology was not simply fortuitous. After World War One, AT&T had helped pioneer paternalistic practices of labor control; especially consequential was its installation of company unions (Green, 2001, p. 157; Vallas, 1993, pp. 35-81; Schacht, 1985). In one segment of the company’s sprawling division of labor, nevertheless, an independent union had managed to subsist: the International Brotherhood of Electrical Workers, an affiliate of the American Federation of Labor.

When, beginning in the late 1930s, two left-led CIO unions – the American Communications Association and the United Electrical Workers (Stepan-Norris and Zeitlin, 2003, pp. 317-19, 172-82, 202-6) – targeted telephony, they thus confronted a fragmented, jurisdictionally contested, and ideologically inhospitable field. This crucial feature was slow to change. As seventeen independent telephone unions succeeded in constituting themselves out of the dozens of Bell System company unions, and combined to form the National Federation of Telephone Workers (NFTW), true unity of purpose remained elusive. “Many members of these organizations”, writes Venus Green (2001, p. 173) about NFTW locals, “abhorred strikes and looked to the organization merely as a means to share information and possibly develop strategies around common issues such as pensions.” Symptomatic was that the NFTW long refused to affiliate as a body with either of the two umbrella federations, the AFL or the CIO.

Despite this, greater collective self-organization slowly succeeded as the NFTW grew into the CWA, and with this embodied industrial and political action. In 1945, the NFTW officially espoused (“The Telephone Worker, 1945” “some measure of centralized control over the economy” to alleviate capitalism’s demonstrated propensity to crisis, asserting that
‘There is nothing undemocratic about such controls; rather they are the essence of the democratic process.’ In the run-up to the watershed 1948 election, the political platform embraced by the CWA called for guaranteed full employment, lower prices accomplished through reduction and/or redistribution of corporate profits, equal pay legislation to end exploitation of women workers, an ‘adequate housing program, reduction in personal income taxes, Federal aid to education, extension of social security’ and, significantly, the lowering of ‘excessive’ telephone rates (CWA, 1948a, b, c, d, 1949).

But the political balance of power was shifting convulsively. Organized labor’s ability to pursue a transformative social-justice agenda was becoming a focus of wracking conflict and, ultimately, of profound historical defeat. As late as 1943, the seventh national convention of the American Communications Association, a small Left-led CIO union, had enjoyed a message of greeting from no other than President Franklin D. Roosevelt. During the 1947 telephone strike, in contrast, CWA leaders (recalling the draconian wireline nationalizations of the First World War) worried that President Truman would intervene without heeding union president Joseph Beirne, who was denied direct access to Truman (Kammet, 1944, p. 2; Caplan, 1947, p. 7).

Corporate and state power were being mobilized against organized labor; the window in which radical extensions of public service provision had been pursued was snapping shut. Almost concurrent with the 1947 telephone workers’ walkout a national watershed was reached with passage of the Taft-Hartley Act. This legislation supplanted the pro-labor provisions of the 1935 Wagner Act with draconian and divisive controls on union organization and tactics, and distracted unions from pursuing other objectives as they scrambled (unsuccessfully) to find means of repealing Taft-Hartley. AT&T felt empowered to cease good-faith bargaining with CWA, and instead met its nominal obligations under the new law by merely sending executives to attend meetings with union representatives; the carrier also continued to pursue a divide-and-conquer strategy by insisting that the union bargain with its multiple corporate subsidiaries – two dozen-odd operating companies, Western Electric, and Long Lines; and AT&T also directed new propaganda campaigns at its employees (US Congress, 1950).

In May, 1949, after prolonged and damaging internecine feuding, CWA affiliated with the CIO as a full-fledged international member, a link that helped the union insist successfully on a need for congressional hearings where it could showcase AT&T’s unsavory labor practices. But joining at last with the CIO signaled vulnerability rather than strength, and the terms on which it occurred were damaging. CWA’s affiliation with the CIO signified the effective sacrifice of one small Left-led union, the ACA, and helped to isolate another, the more formidable UE. These fractures within the union movement did nothing to strengthen the likelihood that labor’s unfulfilled agenda for social justice might continue to help drive policy.

Vigorously pursuing bread-and-butter for its membership (Barbash, 1952), the young CWA acquiesced to limits on its ambitions and freedom of action. On one hand, a series of CWA strikes between 1949 and 1955 compelled AT&T to grant redistributive measures, in the form of enhanced wage-benefit packages for union members. On the other, the CWA’s call at its origin for equal employment on behalf of women now languished, although women continued to account for hundreds of thousands of the union’s members; and no official recognition was accorded the need to open union jobs to workers of color. It would take another burst of protest and reform during the 1960s and early 1970s for these disabling injustices to be addressed. And, when the telephone industry found itself becoming the watershed legal case for instituting equal employment opportunity – affirmative action – throughout corporate America, the gains for social justice that followed were substantially undercut by the unbroken management control over new technology and the labor process that AT&T had succeeded in preserving (Green, 2001).

A third key dimension of public service telecommunications unfolded through alterations in patent policy. These changes ultimately compelled AT&T – a premier high-tech corporation – to cease wielding the inventions dreamed up in its corporate labs as a competitive weapon, and to make them available for other purposes. Which purposes?
Public service: opening corporate knowledge for what?

Political struggles against US corporate patent monopolies date to the arrival of genuinely national capital at the end of the nineteenth century; from this time forward, struggles to open corporate knowledge impinged on the development of high-technology industries. An attorney for AT&T (then known as American Bell) confided to the company's president in 1891 (in Reich, 1985, p. 137) that “The Bell Company has had a monopoly more profitable and more controlling – and more generally hated – than any ever given by any patent.” Popular revulsion did not abate. Opposition to AT&T's proprietary patent monopolies went on, rather, to constitute a substantial and recurrent element in efforts to rein in the company's multifaceted corporate power.

During the 1920s, the epicenter of this political struggle became the dispensation of patents governing radio technology. General Electric, RCA, Westinghouse, and AT&T had formed a cartel to control all aspects of radio system development (Aitken, 1985); but, as the market for broadcasting exploded (launching a financial craze that anticipated Internet commercialization), social antagonism to this “Radio Trust” likewise mushroomed. So intense did it become that, in the end, AT&T was forced out of broadcasting.

However, opposition to AT&T's proprietary patent policies did not abate, but coalesced once more in the changed political context of the Great Depression. Schemes to compel AT&T to open its corporate knowledge built support among those who believed that the company had contributed to high unemployment by not working its patents. The FCC's telephone investigation devoted sustained attention to AT&T's patent policies, and reached sweepingly negative conclusions about their economic and political effects. The remedy sought by the agency (US FCC, 1938, p. 712) was to compel AT&T to divest its Western Electric manufacturing subsidiary, and to make it undertake a program for compulsory patent licensing – in keeping with AT&T's ostensible status as a public utility corporation.

AT&T momentarily fended off structural change. Building on Assistant Attorney General Thurman Arnold's encompassing efforts to open US industry to greater competition, however, during the Second World War the Department of Justice commenced on an antitrust proceeding that likewise resurrected some of the FCC's chief policy concerns (James, 1943; Timberg, 1945). A formal prosecution commenced in 1949 and, after labyrinthine maneuvering, the Justice Department reached a consent decree with AT&T in 1956. AT&T was not required to divest Western Electric and appeared indeed to have been granted a legal sanction for its quasi-monopoly status, which generated considerable dissatisfaction; but AT&T was now obliged to license its most of its patents royalty-free to other companies, as well as to make available technical information, drawings and specifications.

When this result was secured, however, it bespoke an achievement not of an anti-monopoly crusade but of adherents of an ascendant militarized, high-technology capitalism. Riordan and Hoddeson (1997, p. 181) find that federal authorities wanted to ensure that the new technology of microelectronics, the transistor in particular, would not be subjected to the protracted legal fighting that had riddled corporate development of radio technology. Within a rapidly broadening and highly dynamic field of technology, possessing crucial strategic importance for military industries like aerospace, computing, and telecommunications as well as for the civilian economy, the outcome of the AT&T antitrust case thus ensured that Bell Laboratories inventions would be made accessible to capital in general, and not merely to AT&T. Near-concurrent antitrust prosecutions – one against IBM, another against RCA – comprised parts of “one program to open up the electronics field,” as the nation's top antitrust official declared (New York Times, 1956; Graham, 1986, p. 81), and established a strategic zone in which corporate patent control could not as easily obstruct military-industrial innovation. By the end of 1961, with electronics stocks sizzling, between 150 and 200 semiconductor companies had been established (Berlin, 2005, pp. 83, 125), and information and communications technology was being readied to become the keystone of a new economic base.
Conclusion

Public service telecommunications developed via concrete political struggles waged throughout the Depression and extending into post-war America. By extending governmental regulatory authority, reformers instituted somewhat more democratic mechanisms of network system oversight and control. A whole array of agencies – state and federal; judicial, legislative and executive - acting in loose concert pushed through changes that, previously, neither capital nor the state had been able and/or willing to undertake. Notable among these were redistributionist alterations to ratesetting policies which maximized residential telecommunications use; and government support for a continuing network build-out to provide greater inclusivity of access. A greater measure of official neutrality in regard to labor relations and employment practices resulted in the realization of collective bargaining rights by independent trade unions. As business and political reaction against the New Deal set in after the Second World War, and as the USA began to wage its part of the Cold War, finally, AT&T's research and patent policies were changed not to support democratic control over science and technology, but to help erect a militarized high-tech capitalism.

In the USA, therefore, the historical record of public service telecommunications is profoundly ambiguous. Indeed, beginning around 1940 a conviction began to grow in and around official circles, that a more comprehensive and robust public service settlement could not be realized, owing to AT&T's repeated exercise of its monopoly power. That belief contributed to a subsequent round of radical policy change, which broke up not only AT&T but also the public service settlement in which telecommunications system development overall had been encased.

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