THE TELEPHONE COMES TO PITTSBURGH

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In the late 1860's the Western Union Telegraph Company, the colossus of telegraphy and America's first great corporate monopoly, ventured into the field of local communication with printing telegraph instruments. As a manifestation of this interest the Central District and Printing Telegraph Company was organized in 1874 to establish a local printing telegraph network for the Pittsburgh business community. A Pittsburgher and a former Western Union official, Thomas B. A. David, was one of the founders of this company and was its president for the first six years. Western Union, however, retained financial control through ownership of approximately two-thirds of the initial capitalization.

From May, 1874, until 1879, this Central District and Printing Telegraph (CD and PT) Company operated, with the aid of the Western Union personnel in this area, a telegraphic exchange service for the larger Pittsburgh business firms. Each subscribing establishment was wired to the company's central exchange in the First National Bank building at Wood Street and Fifth Avenue. Telegraphic devices known as printers and not unlike present-day teletypewriters were used to send messages to the central office. There, an operator received and repeated them upon the lines of the subscribers for whom the messages were intended. Before the coming of the telephone this local telegraphic system was handling over forty thousand messages a year.

It was not long, however, before the service provided by this telegraphic network was immeasurably enhanced by the substitution of telephones for the telegraphic printers. In the summer of 1877, Gardiner G. Hubbard, Alexander Graham Bell's enterprising father-in-law, came to Pittsburgh to interest T. B. A. David in the newly-invented telephone. One year after this visit a crude telephone switchboard was set up in the operating room of the Pittsburgh company among the tele-

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graphic printers, and the company thereupon announced that it rented telegraph lines equipped with the "speaking telephone." By the end of 1879 almost all of the printers had been replaced by telephones. As a result, three hundred Pittsburgh business organizations were enjoying the advantages of conversational intercommunication. But this transition from the telegraphic printer to the telephone was accompanied by a reorganization of the CD and PT Company, a reorganization which terminated Western Union's control over the local communication network.

Like the establishment of the CD and PT Company, this transfer of control was also an incident in a larger story—in this case the story of the struggle between Western Union and the National Bell Telephone Company for supremacy in the new but promising field of telephony. In 1878, after having refused to purchase the rights to the original Bell patent for one hundred thousand dollars, Western Union became convinced of the practicability of the telephone and made a belated but vigorous entry into the field with its own instruments. As a result of this step the Pittsburgh company began to receive Western Union telephones in the summer of 1878. But the stewards of the Bell patent, led now by the dynamic Theodore Newton Vail, brought suit against the telegraph giant for patent violations. After months of litigation the officials of Western Union were forced to concede that their telephones were infringing upon the Bell patent. Recognizing the inevitability of an adverse court decision, Western Union agreed to an out-of-court settlement which barred them from the telephone business. This fundamental accord was supplemented and clarified by other agreements which directly involved the CD and PT Company. The net result locally was to bring the Pittsburgh company into the embryonic Bell system.

In November, 1879, the reorganized local company, still operating under its original charter and name, signed a license contract with the National Bell Telephone Company. The provisions of this 1879 contract reflected the ambitions of the men who had assumed the responsibility for exploiting the original patent of Alexander Graham Bell. In exchange for the privilege of using the telephones manufactured under this now invaluable patent, the CD and PT Company guaranteed the Bell patentees a permanent stake in the financial and administrative affairs of the local company. Following the signing of this contract the national organization continued to extend its influence over the local
company until the legal form of domination was added in 1918 to the already achieved substance. In that year the CD and PT Company, which had changed its name several years earlier to the Central District Telephone Company, was enveloped in a movement of centralization and consolidation. As a result the local company, which had been organized in 1874 as a Western Union telegraph subsidiary capitalized at one hundred thousand dollars and had grown to a twenty-five million dollar telephone company in the Bell system, lost even its nominal independence, becoming an administrative and operational district of the Bell Telephone Company of Pennsylvania—the latter being one of the larger units in the American Telephone and Telegraph Company.

As regards the technology of early Pittsburgh telephony, there too is found a trend away from independent local action towards a growing dependence upon the parent company. But underlying this development was the ever-present necessity for accommodating an always increasing demand for telephone service.

In the fall of 1879, one year after telephone exchange service was initiated, there were three hundred firms using the new "speaking telephone." The telephone directory of that year was a six-page, pamphlet-sized booklet. There were no telephone numbers listed as yet; to call a subscriber one asked for him by name. There were only six residential telephones listed in this directory and even these were used for business rather than social purposes—they belonged to anxious business men who needed to keep in constant touch with their establishments.

Just twenty years later, at the close of the century, there were more than ten thousand telephones in the Pittsburgh-Allegheny area and approximately three thousand of these were in homes. The telephone directories of 1900 were rapidly approaching in size the large volumes which are used for the same purpose today. In place of the two rented rooms which had served the CD and PT Company in the beginning, there were in 1900 several exchanges scattered throughout Pittsburgh and Allegheny and a newly-constructed seven-story building in downtown Pittsburgh which was owned and operated by the company. This building, incidentally, is still the nerve center of Pittsburgh telephony.

This phenomenal expansion, from a handful of subscribers to thousands in just two decades, was made possible by a long, steady progression of technical advances. There were no fortuitous, accidental discoveries. Each innovation followed close on the heels of urgency as the
quick spread of the wire network constantly strained the old techniques and rapidly rendered new equipment inadequate.

At the start, wherever it was possible, the pioneer technicians of telephony in Pittsburgh leaned heavily on the prior art of telegraphy. This was especially true in the matter of wiring. The first telephone lines, in fact, were exact replicas of telegraph lines: galvanized iron wires suspended between crossarms which were perched on tall cedar or pine poles. And when it became necessary to string more lines, the telephone companies did what their telegraph forebears had done: they added crossarm upon crossarm. Before long this practice led to strange results and weird patterns high above the streets of downtown Pittsburgh. The area near the main exchange at Fifth Avenue and Wood Street was soon shaded with an amazing cluster of wires and crossarms which, besides being an esthetic eyesore, was an enticingly complex target for the axes of the city’s firemen.

As early as 1880 these ungainly pole-lines had to be supplemented with trestles or racks which were erected on the roofs of buildings in the wire-congested areas. But even during the brief period when this expedient sufficed, it caused the company considerable difficulty. Various arrangements had to be made with the owners of the buildings, and it appears that the nature of the arrangements varied with the character of each property owner. In one case fifteen dollars a year and a guarantee to keep the roof in repair seemed to suffice. In another instance the only inducement that was necessary was a gift of cigars. A free telephone was the price in many cases. But one man felt that the use of his roof was worth five thousand dollars. Moreover, many of the owners of the properties so used became unusually sensitive concerning the appearance and condition of their roofs. The bills paid for repairing and replacing roofs soon formed a considerable item in the company’s expenses. Faced with such difficulties and an ever-thickening maze of overhead wires, the company began in 1881 to lay underground cables.

Even more pressing than these wiring problems were those which appeared in the central office. There the era of telegraphy provided few precedents and the telephone “electricians,” as a result, had to start largely from scratch. The first Pittsburgh switchboard, for example, was a crude affair which was made by two of the local company’s employees. Since the operating procedure was exceptionally cumbersome, it was fortunate that only a few subscribers were wired to this first board. All
of the connections had to be made through the operator's telephones; the operator, therefore, could not handle more than one call at a time. Being an integral part of each connection, these first operators, who were young boys, generally introduced the interconnected parties. If the ensuing conversation lagged, the boys often contributed their own pertinent, sometimes impertinent, comments.

It was only a matter of weeks before this original switching system had to be altered. Similarly, in the next few years, the steady increase in subscribers forced periodic enlargements and modifications of the switching apparatus. Standardized equipment was utilized as soon as it appeared on the market so that it was not long before the construction and installation of central office equipment was taken out of the hands of the local technicians. In 1885, for example, a specialized crew from the Western Electric company came to Pittsburgh and installed a complex, multiple switching unit in the main exchange. The local central office employees were only to operate and maintain this equipment.

Besides such technical adaptations which were required to keep pace with the swelling demand, certain non-technical alterations also were effected to improve the quality of the service. In a sense, these were more or less forced upon the company since criticism of the service by subscribers was constant and vociferous in the early days. T. B. A. David, the first president of the Pittsburgh telephone company, still recalled many years after he had left the business that complaints had been "as numerous as flakes of snow in a storm." So persistent were these critics that they waited on the streets in the early morning to accost Mr. David as he came to work. They generally terminated their harangues by informing him that the telephone was a fraud and a humbug. The situation was serious enough to catch the attention of the city's leading Republican newspaper whose editor castigated these intemperate subscribers in the following belabored manner:

It is a somewhat singular fact that an ordinary sensible businessman will put up with almost anything under the sun, from anything he makes use of except the telephone; but from that greatest invention of this or any other century—an instrument that daily saves him more time and labor than all his other improvements put together—he won't stand the slightest nonsense. He turns in a signal, if the answer does not come instantly he swears. He tells the central office the person he wishes to speak with, if the bell does not tap again before he could count a dozen, he swears some more, and
vows he could go and do the errand in half the time. . . . We recommend that the bells be made with a little mirror, to enable some of these irascible people who think it strange that the telephone can't go out and harness up a horse for them, to see the latest and most improved specimen of a jackass.

Besides the early technical flaws and besides the impatience of some of the subscribers, there was yet another contributing cause to the bad public relations of the company, namely, the boy operators. The hurried routine in the operating rooms seemed only to accentuate their instinctive bent for mischief. It was therefore only a matter of time before they had caused sufficient trouble to warrant replacing them with milder-mannered female operators. In the political campaign of 1880 the boy operators caused a rumpus when they "deserted the switchboards and dumped a ton or more of cardboard exchange tickets upon the heads and torches of the marchers" who were parading along Fifth Avenue. Then, too, the boys, as might be imagined, were not sweetly complaisant when confronted with an irate subscriber at the far end of the line. As one old employee recollected with nostalgia: "frequently a subscriber might be told to go to a place where a snowball has a very short life."

In the summer of 1882 the company began to replace the boys with female operators. It was some time, however, before the women were able to take over the switchboards on all shifts. By 1900, after the company's exchanges had been located in its own buildings where suitable facilities were provided for the women, boy operators were as scarce as they had once been troublesome.

Although the hiring of women reduced the friction between subscribers and operators, it was not a panacea. The longstanding informality between subscribers and operators placed an unfair handicap upon the women who were, of course, predisposed to friendly chatter. When the ladies first appeared in the central offices as operators, subscribers were accustomed to calling for all sorts of general and local information. The women promptly proceeded to expand this special and somewhat irregular service. One of these first female operators fondly remembered in later years calling her subscribers in the morning and discussing "the previous day's happenings, the health of the family, what they expected to have for dinner and all sorts of interesting and intimate gossip. Even the men," she recalled, "did not hesitate to visit
occasionally with us in this way.” The charm of this custom evidently was lost upon the officials of the company. One of the central office electricians arranged an ingenious circuit to connect the telephones of all the operators to a rotary switch which in turn was wired to the chief operator’s telephone. With a flick of this switch the chief operator could listen in on any operator suspected of engaging in such unnecessary chit-chat with her subscribers.

The officials of the company also sought to improve the service by enlisting the cooperation of the subscribers. As early as 1888 the number of subscribers was too large to permit the continuation of the practice of using names for the designation and selection of called parties. Each person, therefore, was given a number which was associated with his line at the central office. All subscribers were then requested to use these numbers rather than names when asking for a connection. Judging by the frequency with which the company sought to publicize this regulation, it seems highly probable that most of the telephone users were loath to tolerate this trifling inconvenience.

Procrastinating tendencies and an inclination to use the telephone for frivolous purposes were particularly anathema to the early directors of the business. Subscribers were asked to measure their words to the operators so as not to detain them unnecessarily. And they were urged “not to permit the wires to be occupied by unnecessary conversation, singing, etc., as the speedy handling of the business is thereby seriously interfered with.” Profanity, the company cautioned, was justification enough for removing the instrument from the premises of the offending party.

Moreover, the officials of the company became unusually adept—as the following story will bear out—in handling aggressive complaints. In the 1890’s a man named Chipley, who was in charge of the Pennsylvania Railroad’s freight department, was infuriated one day by the treatment he received from one of the operators. He stormed into the office of Henry Metzgar, the general manager of the company, and demanded satisfaction. Metzgar told him that he would discharge the guilty operator after he had investigated the matter. He thereupon sent for her; when she arrived she proved to be a very pretty and innocent-looking young girl. Metzgar told Chipley that this was the operator with whom he had had trouble and asked him to state just what had occurred. Chipley looked at the girl, hesitated, flushed, and then said: “Mr. Metz-
gar, this is all a mistake and I want to apologize to you and especially to this young lady." Whereupon he turned and left. On the way back to the freight depot, however, Chipley's anger returned and back he went to Metzgar's office. Putting his head in the door, he bellowed: "Metzgar, I don't believe that was my operator. I think you just keep that girl to receive the many complaints you get. You're a swindler and a cheat. You and your telephone can go to blazes!"

To conclude in a more serious vein we can briefly indicate the meaning and importance of 19th century telephony in Pittsburgh. Consider first the technical achievement which was involved. In 1877 there were in Pittsburgh only the two experimental telephones which were brought here by Gardiner G. Hubbard. By 1900 the telephone system of Pittsburgh was truly a completed technological masterpiece. There were the thousands of individual wires fanning out from the exchanges, overhead in gleaming copper strands and underground in water-tight cables whose development is a fascinating story in itself. And in the central offices there were the fabulous switchboards with their complicated maze of wires, each one rigorously and fastidiously accounted for.

Consider also the impact of the telephone upon the city's development. As Pittsburgh grew, so did the wire network. The telephone appeared just as a surge of industrial expansion was emerging out of the depressed conditions of the mid-1870's. Examine the earliest directories and you find that the city's largest and most prominent enterprises were the first to subscribe to the service. Many large concerns with widely scattered plants and offices used a telephone at each location, with obvious benefits in administrative and operational efficiency. Nor were the large businesses the only ones to utilize the telephone before 1900: in the 1880's and 1890's the increase in subscribers was largely due to the enrollment of small industries, stores, service shops, etc. Judging, in fact, by the wide variety and great number of business enterprises listed in the 1900 directory, it seems highly probable that the city's telephone network already was indispensable.