



1999

When Old Technologies Were New: Implementing the Future

Carolyn Marvin

University of Pennsylvania, cmarvin@asc.upenn.edu

Follow this and additional works at: http://repository.upenn.edu/asc_papers

 Part of the [Communication Commons](#)

Recommended Citation

Marvin, C. (1999). When old technologies were new: Implementing the future. In H. Mackay & T. O'Sullivan (Eds.), *The media reader: Continuity and transformation* (pp. 58-72). New York, NY: Sage Publications. Retrieved from http://repository.upenn.edu/asc_papers/197

This paper is posted at ScholarlyCommons. http://repository.upenn.edu/asc_papers/197
For more information, please contact repository@pobox.upenn.edu.

When Old Technologies Were New: Implementing the Future

Keywords

communication, technology

Disciplines

Communication | Social and Behavioral Sciences

When old technologies were new:
implementing the future

Carolyn Marvin

Performances by wire

[. . .] Perhaps more than any other communications invention, contemporaries considered the telephone the bellwether of a new age. [. . .] As the sole nineteenth-century instrument that transmitted voices across space at the moment of speech, the telephone was both a carrier of point-to-point messages to individuals and a medium of multiple address for public occasions of music, theatre, and politics. The most popular feature of the Paris Exposition Internationale d'Électricité of 1881 was such an arrangement, variously described as the theatrophone and the electrophone. From August to November crowds queued up three evenings a week before two rooms, each containing ten pairs of headsets, in the Palais d'Industrie. In one, listeners heard live performances of the Opéra transmitted through microphones arranged on either side of the prompter's box. In the other, they heard plays from the Théâtre Français through ten microphones placed at the front of the stage near the footlights.¹ Not only were the voices of the actors, actresses, and singers heard in this manner, but also the instruments of the orchestra, the applause and laughter of the audience – 'and alas! the voice of the prompter too'.²

[. . .] In London in 1891, the Universal Telephone Company placed fifty telephones in the Royal Italian Opera House in Covent Garden, and another fifty in the Theatre Royal, Drury Lane. All transmitted exclusively to the estate of Sir Augustus Harris at St John's Wood, with an extension to his stables.³ By 1896 the affluent could secure private connections to a variety of London entertainments for an inclusive annual rent of ten pounds sterling in addition to an installation fee of five pounds.⁴ The queen was one of these clients. In addition to having special lines from her sitting room to the Foreign Office, the Home Office, the Board of Green Cloth,

This chapter appeared as 'Implementing the future', in *When Old Technologies Were New: Thinking about Communications in the Late Nineteenth Century* (Oxford, Oxford University Press, 1988), pp. 209–31.

and Marlborough House, Her Majesty enjoyed direct connections to her favourite entertainments.⁵

Commercial interest in a larger, less exclusive audience was not far behind. 'Nickel-in-the-slot' versions of the hookups provided by the Theatrophone Company of Paris to its individual subscribers were offered as a public novelty at some resorts. A franc bought five minutes of listening time; fifty centimes bought half as much. Between acts and whenever all curtains were down, the company piped out piano solos from its offices. [. . .]

Informal entertainments were sometimes spontaneously organized by telephone operators during the wee hours of the night, when customer calls were few and far between. On a circuit of several stations, operators might sit and exchange amusing stories. One night in 1891 operators at Worcester, Fall River, Boston, Springfield, Providence, and New York organized their own concert. The *Boston Evening Record* reported:

The operator in Providence plays the banjo, the Worcester operator the harmonica, and gently the others sing. Some tune will be started by the players and the others will sing. To appreciate the effect, one must have a transmitter close to his ear. The music will sound as clear as though it were in the same room.⁶

[. . .] And, portent of the future, in 1912 the New York Magnaphone and Music Company installed motor-driven phonographs that sent recorded music to local subscribers over a hundred transmitters.⁷

In 1889 a Chicago Telephone Company experiment in transmitting *The Charlatan*, a comic opera playing at the Columbia Theatre, was so successful that its general manager announced plans to furnish subscribers with musical events, comedy, drama, vaudeville, and sermons by prominent preachers.⁸ Manager Angus S. Hibbard pointed to the precedent set by the Wisconsin Telephone Company of Milwaukee, which had provided orchestral music from the Palm Garden resort free 'as a compliment to the company's subscribers' every evening and Sunday afternoon for three years. A report six weeks into the Palm Garden experiment described it as 'a distinctively twentieth-century idea'.⁹ [. . .] Wisconsin general manager J.D. McLeod described his company as American 'pioneers': 'Judging from the nightly demand upon us, and its popularity, there is a merchantable quantity in such entertainments; and amusement people may ultimately take it up on these lines. But as far as the Wisconsin Telephone company is concerned, it is enough to have broadened its usefulness.'¹⁰

Telephone entertainments were not limited to musical transmissions. In March 1912 alumni at the annual Chicago Yale Club banquet heard Yale's president address after-dinner remarks to them by long-distance from a comfortable seat in New Haven. Seven hundred newspapermen, gathered at the Waldorf Astoria a few months later for a joint meeting of the Associated Press and the American Newspaper Publishers' Association, were treated to a special after-dinner telephone program. As each guest listened on a special receiver fitted into a watchcase, President Taft spoke

from Boston, Canadian premier Robert Borden spoke from Hot Springs, Virginia, a Kipling poem was recited from Daly's Theatre, and a vocalist performed a 'Southern song' from another New York theatre, the Winter Garden.¹¹

Sporting events provided occasions for telephone transmission, and had inspired imaginative experiments with the telegraph. In 1884 three Nashville telegraph operators, J.U. Rust, E.W. Morgan, and A.H. Stewart, organized a 'vivid view of the exact situations and plays in a game of baseball played in Chattanooga' for an audience in a Nashville hall.¹² From the playing field, one operator telegraphed each play of the game over a leased line to Nashville, where another operator announced it to the audience. The third operator moved cards bearing the players' names around a ball field painted on poster board that was visible to the entire audience.

In 1886 Detroit, Morgan & Co., as this entrepreneurial team called itself, relayed a Detroit-Chicago game to a Detroit Opera House crowd of more than six hundred [. . .]. The *Detroit Free Press* described the reaction of the audience.

The audience during the first four or five innings of yesterday's game was wrought up to a very high pitch of enthusiasm. For instance when the operator read - with Dalrymple's name appearing as batsman - 'foul fly to left', the audience fairly held its breath, and when the next instant the operator called out, 'and out to White', there came a storm of applause, just such as is heard on a veritable ball field. And so it was all through the calling of strikes, balls, long hits and short ones, outs, errors and 'safes', the excitement was intense.¹³

By 1889 the idea had caught on elsewhere. As a gesture of good will to the twenty-four hundred telephone subscribers of the Cleveland Company, its operators were 'always informed regarding the base ball score and always ready to answer questions regarding it. They keep up with the games from inning to inning, and most of them being interested themselves are agreeable in answering all demands on their information so far. Such is the policy of the exchange.'¹⁴ [. . .]

[. . .]

Church services were also an occasion for telephone transmission. From about 1894, telephone wires connected subscribers with local pulpits in towns as large as Pittsburgh and Philadelphia, and as small as Paris, Texas.¹⁵ [. . .]

Telephone pulpits seem to have come earlier to British churches. An account of the inauguration in 1890 of a service in Christ Church in Birmingham with connection to subscribers in London, Manchester, Derby, Coventry, Kidderminster, and Hanley went as follows:

When the morning service commenced there was what appeared to be an unseemly clamor to hear the services. The opening prayer was interrupted by cries of 'Hello, there!' 'Are you there?' 'Put me onto Christ Church.' 'No, I

don't want the church', etc. But presently quiet obtained and by the time the Psalms were reached we got almost unbroken connection and could follow the course of the services. We could hear little of the prayers – probably from the fact that the officiating minister was not within voice-reach of the transmitter. The organ had a faint, far-away sound, but the singing and the sermon were a distinct success.¹⁶

[. . .]

An occasion that shared many features of the religious revival was the political campaign. Both events were marked by intense community discussion about the proper kind of society for people to live in, and both were strongly oral in character. Both fell to the blandishments of electricity with no resistance. In 1896, an election year that saw a prolific use of electric media in connection with political news and entertainment, the South Bend Telephone Company of Indiana connected its patrons free of charge one August evening to a tent wherein the Honorable John L. Griffiths of Indianapolis was making a Republican campaign speech to assembled supporters. [. . .] The occasion had been conceived as a two-way affair, with contributions from the crowd as much a part of the event as the speech of the candidate. [. . .]

The telephone could reproduce the heinous as well as the holy, and some communities were interested in both. Public justice pursued in the face-to-face environs of the courtroom was occasionally extended beyond its walls. The sensational murder trial of Reginald Birchall in Woodstock, Ontario, in 1890 attracted people from every neighbouring town to a courtroom scarcely large enough to accommodate the official participants in the trial, alongside journalists from London, the United States, and all Canada. An enterprising local tavern keeper arranged to install a transmitter above the judge's bench in the courtroom. This was connected to twenty receivers in his tavern, each of which he rented for twenty-five cents an hour to the overflow of the curious, and presumably the thirsty. Four tubes were connected to a private room for ladies. All were kept busy.¹⁷

Systems of electric news

Early in 1889 the *Electrical Review* summarized 'In the Twentieth Century: The Day of an American Journalist in 2889', a Jules Verne short story that portrayed a great American editor one thousand years thence:

The editor rules the world; he receives ministers of other governments and settles international quarrels; he is the patron of all the arts and sciences; he maintains all the great novelists; he has not only a telephone line to Paris but a telephote line as well, whereby he can at any time from his study in New York, see a Parisian with whom he converses.

Advertisements are flashed on the clouds; reporters describe events orally to millions of subscribers; and if a subscriber becomes weary, or is busy, he

attaches his phonograph to his telephone, and hears the news at his leisure. If a fire is raging in Chicago, subscribers in New York may not only listen to the description of an eyewitness, but by the telephote may see the fire.¹⁸

Most predictions of the future of newsgathering were not so dramatically detailed, but the theme of control at a distance so dear to the hearts of scientists and engineers was here extended to the world's understanding of itself through a process of centralized electrical monitoring. The Faustian impulse to embrace the whole world in the nerve net of electricity already had created telegraphic wire services for this purpose. [. . .]

Innovative systems were often recapitulations. Telegraphic news reached nineteenth-century publics not only through the traditional medium of the printed newspaper, but also in bulletins hastily scrawled from the latest dispatches and posted outside newspaper offices. A bulletin board electrically automated for this purpose was exhibited in New York in 1888. It consisted of a row of horizontal windows through which messages were spelled out by a series of separately revolving wheels inscribed with alphanumeric characters. The electric bulletin board was 'not intended to have a record of the news it conveys, but is designed merely to satisfy the eagerness for news'.¹⁹

The *New York Times* led its sister newspapers in the regular use of wireless telegraphy. For European stories in its Sunday edition, for which mails were too slow and undersea cables too costly, the *Times* had come to rely on wireless by 1908. Four years later it was receiving 'practically all of its daily foreign news service by wireless telegraphy', a then remarkable stream of about twenty thousand words a week.²⁰ This exchange between the old world and the new required a cooperative network of cables, telephones, and wireless stations, and was said to have broken a number of speed records in overseas wireless transmission.

The distribution of presidential election returns in the late nineteenth century was the most ambitiously organized American effort to use new electric technologies to deliver the news. Election returns had been distributed by the telegraph since its invention, but the telephone added speed, immediacy, and convenience. Early telephone distribution depended on a backbone of telegraphic returns and used supporting visual technologies such as the stereopticon, the kinoscope, and the electric searchlight. From 1892, a growing demand for quick and comprehensive election statistics was met and doubtless augmented by unifying old and new networks for increased capacity and flexibility.

The first coordinated system of telephone returns was organized for the presidential election of 1892. During the previous election, American Bell Telephone Company president Howard Stockton had invited guests to his Boston home to hear the returns come in over a special telephone wire on election night.²¹ For the 1892 election, the telephone companies of New York and Chicago arranged to forward returns coming in to them from telephone and telegraph wires across the country to all interested New York and Chicago clubs and hotels. Information was systematically exchanged between these two major cities over newly laid circuits through

Milwaukee. Some telephone bulletins were received as much as ninety minutes in advance of bulletins from local telegraph offices.²²

[. . .]

Not until the presidential election of 1896 were long-distance lines plentiful enough for telephone companies to organize a national network for gathering and distributing election returns. Here, too, extensive telegraphic support was still necessary. [. . .]

For the election of 1900, AT&T collected local returns from telephone companies across the country, compiled summary bulletins, and circulated updated returns back through the same network of local exchanges. In New York City, the New York Telephone Company provided services to thirty-two Manhattan clubs and hotels and thirty-five country clubs, hotels, and associations in Westchester County, and connected individual subscribers to a hundred special stations where operators with the latest information answered their enquiries. Stereopticon bulletins were also displayed at the principal exchanges. In New York, less demand for the return-reporting services of Western Union than in previous elections was attributed to the improved quality of telephone equipment and services.²³

With the cooperation of AT&T, the telegraph companies, and their local and state networks, the Chicago Telephone Company relayed returns within a minute of receipt to an estimated twenty-five hundred subscribers in hundreds of clubs and houses where private telephone parties were in progress. A General Electric searchlight projected by the *Record* from the top of the Chicago Masonic Temple did not fulfill the fondest hopes of sky-writing enthusiasts, but it did communicate a message:

It had been announced that McKinley's election would be signaled by a steady horizontal sweep of light from left to right and right to left, while if Bryan were successful the beam was to be swung in a circle around the horizon, with a vertical up-and-down motion. As long as the result was in doubt the agreed signal was a steady, vertical ray. Many watchers throughout Cook County thus received their first news of the result.²⁴

In 1912 the distribution of election returns was still provided free of charge and without interruption to regular telephone service, but it had been much refined and perfected. [. . .] The public was notified in the newspapers to call 'Election News' for the latest bulletins, each approximately one page long and requiring two minutes to read. At the end of each bulletin readers announced, 'Please hang up your receivers, another bulletin will be read in ten minutes.'²⁵ Bulletins were read continuously to one group of subscribers, then another, until new bulletins came in. Special equipment prevented interference or interruption from subscribers attempting to speak or to signal the operator.

What did it mean, this novel network of the latest election intelligence, to its beneficiaries? It did not seem to them to be simply an extension of the telegraph. Dismissing the familiar wire service network as 'very largely a mechanical operation, which a child can comprehend', the

Manchester (New Hampshire) *Union* concluded that ‘the collection of the returns from Kickapoo, Arizona; Masardis, Maine; Laredo, Texas, and their dissemination among millions of people before they retire to the privacy of their homes is another matter.’²⁶ Impressed by estimates that perhaps half a million persons had received telephone returns in their homes and offices, the *Union* marvelled:

The news was, literally speaking, scooped up in this great telephone net and talked into one’s ears from unexpected distances . . . Thousands sat with their ear glued to the receiver the whole night long, hypnotized by the possibilities unfolded to them for the first time . . . If we can hear hundreds of thousands of people scattered over this broad land speak, why can we not in time produce other wonderful results now deemed impossible?²⁷

Telephonic news seemed poised to overtake telegraph news, an American electrical journal commented in 1895:

Already in large cities, the ordinary subscriber uses his telephone ten times a day . . . Moreover, we record this week the use of the long distance telephone wholesale for [political] convention news purposes, thus sapping the vitals of the telegraphic news systems of the Associated and United Press.²⁸

Though the picture was not quite that grim, since the telephone and telegraph would learn useful ways of cooperating in the offices of the wire services, newspapers were indeed enamored of the excitement of telephone news. The capacity to communicate the thunder of events directly to an audience with an immediacy greater than that of the telegraph or newspaper alone distinguished the new electric media from the old, even as the new media were pressed into service of the old. In spite of the American Bell Company’s policy against permitting private individuals or companies to send news by telephone wire, late nineteenth-century newspapers routinely featured late-arriving telephonic dispatches with bold headings announcing precisely this means of transmission.²⁹

By reproducing and simultaneously transforming the telegraphic information network, the telephone distribution of breaking news was part of the transition from a passing world. The crowds that gathered in the streets to celebrate McKinley’s victory in 1896 had little inkling in that euphoric moment that their descendants would learn the results of great political contests in sedately familiar living rooms. *Harper’s Weekly* described the world that was passing, and, without recognizing them, some of the instruments of its transformation:

Such a crowd as tramped and cheered and roared up and down Broadway election night, and surged about every building where a calcium-light was throwing election returns upon a screen, has never before been seen in New York . . . The crowds on upper Broadway were entertained as well as instructed; between bulletins on one screen there was an exhibition of the

vitascopes, and as the scenes were flashed upon it the shouts of laughter and merriment rose above the din of horns and rattles.³⁰

Other efforts to distribute the news were organized from time to time. In the farming country of the Midwest at the turn of the century, weather reports were regularly read over the wires.³¹ In April 1898, when all signs pointed to the entry of the United States into Cuba's war against Spain, the general manager of the Chicago Telephone Company promised that every one of the company's fourteen thousand subscribers would be notified by operators within twenty minutes of any official declaration of war. 'Our idea in doing this is to inform our patrons of the declaration probably quicker than they would otherwise get the news', Angus S. Hibbard explained in an official announcement: 'We are a quasi-public corporation and we rather consider it our duty to act this way . . . Of course we will try to guard against any canard, but in no event will we assume responsibility for the news as we send it out. Our operators will simply tell the subscribers that we have received it as news.'³²

Ways of using the telephone to get the latest news were also improvised without any professional assistance at all. On party line systems one found 'listeners all along the wire for every scrap of conversation going. So a whole countryside may learn that the doctor is on his way to Mrs Brown, Mrs Jones or Mrs Robinson.'³³ Not all of these listeners were interested only in local news. In 1905 *Telephony* reported that every afternoon in Evanston, Illinois, a subscriber called a prominent business house to inquire. 'Well, what's the news today? Somebody just said that the Atlantic won the yacht race, is that so? Has anybody resigned from the cabinet today? How did the Chicago-Pittsburgh game come out? Anybody hurt in the trolley collision? Do you know what day the Cunard liners sail for Europe?'³⁴

Telephone diffusion: a proto-broadcasting system

In the late nineteenth century, single events such as a declaration of war, a baseball game, a church service, or a concert were transmitted by new technologies with unprecedented immediacy to scattered audiences *on occasion*. Although modern media transmit content of a similar kind, late nineteenth-century telephone occasions otherwise bear little resemblance to twentieth-century mass media programming. Nineteenth-century telephone occasions were derived transmissions of independently occurring events and were intended to extend the primary audiences of the pulpit, stage, concert hall, and playing field. Wholly invented programming, by contrast, is a distinctive social feature of electronic mass media.

Commercial efforts to enlarge audiences electrically for some regularly repeated occasions in the late nineteenth century were generally of short duration; the audiences they attracted were small. Electrophone parties in Britain were said to be a pastime of the idle rich, not the humble poor.³⁵ Electrophone Ltd, one of the sturdier British companies to take up

regular telephone transmission, piped sermons from the most prestigious pulpits and plays from the most prestigious theatres to London's leading hospitals for the edification of affluent patients, and to occasional private residences as well. Nevertheless, twelve years after its incorporation, Electrophone had a regular subscriber audience of barely six hundred.³⁶

But from 1893 until after World War 1, when a number of private companies and national states began to create radio broadcasting systems, an organization in Budapest was a remarkable exception to the usual pattern. This was the Telefon Hirmondó, which for almost a generation transmitted daily programming over telephone wires to supplement the regular telephone service of more than six thousand subscribers. *Hirmondó* was a Magyar term for the crier who shouted the news from the centre of the medieval village for all to hear. Today it denotes a radio announcer. Its semantic transformation followed a path directly through the career of the Telefon Hirmondó. For twenty years Hirmondó's audience received a fully daily schedule of political, economic, and sporting news, lectures, plays, concerts, and recitations. The language of the Telefon Hirmondó was Magyar, the language of Hungarian nationalism. In operation, the Telefon Hirmondó was a closed and exclusive system of cultural communication among the Hungarian elite during the last decades of Magyar power before World War I, a fact that appears to account for both its economic and its cultural staying power.

The Telefon Hirmondó was the brainchild of Tivadar Puskás, a Hungarian engineer who had worked on Thomas Edison's staff of inventors and researchers at Menlo Park. To Puskás, according to Edison, belonged the original credit for suggesting the concept of the telephone switchboard that made the telephone a powerful and practical means of communication. Accounts of the Telefon Hirmondó were followed with interest in the British and American press, and a short-lived imitation of it appeared in the United States. It provided perhaps the only example of sustained and systematic programming in the nineteenth century that truly prefigures twentieth-century broadcasting systems.

The origins of the Telefon Hirmondó lay in the novel and popular theatrophone exhibition that Puskás helped mount at the Paris Exposition Internationale d'Électricité in 1881. The following year he staged his own theatrophone demonstration in Budapest by transmitting a National Theatre opera performance to a nearby grand ball.³⁷ In the meantime, Puskás's brother, Ferenc, acquired the first telephone concession in Budapest, and the Puskás family hired Nikola Tesla, a longtime friend, to engineer its construction.³⁸ The Budapest telephone system prospered under Ferenc Puskás, and in 1892 Tivadar Puskás, who had played a minor role in some of the more exciting electrical developments of the age and knew many of its foremost inventors and engineers personally, returned to Budapest to implement his own remarkable idea of a Telefon Hirmondó. The first program was transmitted from the central telephone exchange to one thousand regular telephone subscribers in 1893. Within weeks of the inception of the Telefon Hirmondó, Tivadar Puskás was dead. His creation outlived him by almost a quarter of a century.

At first Telefon Hirmondó's programming consisted of news summaries read at the beginning of each hour and immediately repeated. Silence reigned until the next hour's transmission. Five months into the new experiment, *Science Siftings* reported:

The news collector does his work in the night, and having his budget filled he takes his place in the central office at nine in the morning and begins to tell his story, which is given in a telegraphic style, clear, condensed, and precise. In five minutes after the first delivery the budget of news is repeated, in case some of the subscribers may not have heard. It consists for the most part of home events and news of Hungary. At ten o'clock the foreign news is given, and after eleven the doings of the Hungarian Parliament. Various items of city news are given during the day.³⁹

News in the daytime was balanced by cultural programs in the evening – perhaps a report of a lecture at the Hungarian Academy, or the recitation 'with all due emphasis' of a new poem.

Efforts to transmit music met with poor success and provided the first indications of a problem that increased with the listening audience. Simply stated, the addition of subscriber outlets diminished the volume of sound for every subscriber. When control of the Hirmondó passed out of the hands of the Puskás family in 1894, a new distribution system that bypassed the regular telephone network eliminated this and other technical problems.⁴⁰ The new company was granted the same right to place its wires as the telephone and telegraph companies. By 1900 the Telefon Hirmondó employed over 150 people in its offices at 22 Megrendelhető Rákóczi, on one of the 'finest avenues' in Budapest.⁴¹

The news operation was like that of any newspaper. News from abroad came by telegraph. Local news was assigned to a staff of twelve reporters. A special staff assigned to the galleries of the Hungarian and Austrian Houses of Parliament forward half-hourly reports of the latest developments.⁴² Galley proofs of every story were printed by hand roller presses in parallel columns on sheets of paper two feet by six inches. Several sheets constituted the daily program. The work of the 'stentors' who read the news was thought to be so exhausting that they were rotated at ten-minute intervals in groups of four.⁴³

[. . .]

Photographs and illustrated advertising posters show that subscribers listened to the Hirmondó through two small round earpieces hanging from a diamond-shaped board mounted on the wall.⁴⁴ The audience for which the service was intended apparently possessed wealth, education, and leisure. Its cultural relaxations were those of the opera and the theatre. Its attachment to sport was aristocratic. The latest intelligence from the principal Hungarian and Austrian racetracks, the cycling and automobile track, and the rugby field and billiard table was 'flashed over the wires the moment the results are known'.⁴⁵ Its children received proper cultural exposure in a weekly children's program of short stories, songs, recitations, and instrumental music.⁴⁶

The Hirmondó devoted the largest share of its programming to the conditions and exigencies of the financial world. Even on Sundays and during evening programs with an artistic and performing emphasis, due attention was given to the stock exchange. Subscribers were kept posted about developments in the Hungarian and Austrian exchanges and the foreign exchanges, including Wall Street and London.⁴⁷ News was also communicated directly from the agricultural districts of the country for speculators in corn and wheat.

[. . .] By 1896 the Hirmondó boasted six thousand subscribers, but this figure represented barely one percent of the population of Budapest.⁴⁸ The number of subscribers remained almost constant until 1917, after which reports of the Telefon Hirmondó dropped out of the foreign press. The audience of the Hirmondó was probably larger, since each household may have represented several listeners, and semipublic installations seemed to attract many different listeners. A traveller's account from 1908 explained how this worked.

You may be seated as I was in the reading-room of one of the hotels or in a large coffee-house, when suddenly a rush is made for a telephone-looking instrument [the Telefon Hirmondó] which hangs from the wall. In time perhaps you will become one of these 'rushers.'⁴⁹

[. . .] Little is known of the Telefon Hirmondó following World War I, during which most of its exterior installations were destroyed. In 1925 the Telefon Hirmondó and Hungarian Radio Broadcasting were combined into a single organization, and the Hirmondó became merely a wire-diffusion agency for studio-broadcast programs.⁵⁰

In the United States at least one brief experiment was directly inspired by the Hirmondó. This was the Telephone Herald of Newark, New Jersey. After sampling the Telefon Hirmondó on vacation in Budapest, a former *New York Herald* advertising manager, M. M. Gillam, set about organizing a similar enterprise in the United States.⁵¹ Gillam and William E. Gun, builder of the battleship *Oregon*, organized the New Jersey Telephone Herald Company with promises of financial backing from a wealthy New York coal magnate. Just as the service was schedule to begin operating, in March 1911, the New York Telephone Company reneged on its contract to lease wires to the Telephone Herald, which it regarded as a competing public utility.⁵² After six months of legal wrangling, the New Jersey Public Utilities Commission held the telephone company to its original agreement. The Telephone Herald inaugurated service on October 23, 1911, with the following daily program:

Daily Program of the 'Telephone Herald'

8.00	Exact astronomical time
8.00- 9.00	Weather, late telegrams, London exchange quotations, chief items of interest from the morning papers
9.00- 9.45	Special sales at the various stores; social program for the day
9.45-10.00	Local personals and small items

10.00–11.30	New York Stock Exchange quotations and market letter
11.30–12.00	New York miscellaneous items
Noon	Exact astronomical time
12.00–12.30	Latest general news; naval, military, and Congressional notes
12.30– 1.00	Midday New York Stock Exchange quotations
1.00– 2.00	Reception of the half-day's most interesting news
2.00– 2.15	Foreign cable dispatches
2.15– 2.30	Trenton and Washington items
2.30– 2.45	Fashion notes and household hints
2.45– 3.15	Sporting news; theatrical news
3.15– 3.30	New York Stock Exchange closing quotations
3.30– 5.00	Music, readings, lectures
5.00– 6.00	Stories and talks for the children
8.00–10.30	Vaudeville, concert, opera ⁵³

The schedule of items presented by the Telephone Herald was faithfully modeled on the Telefon Hirmondó's 'order of the day'. [. . .] The capital reserves of the Telephone Herald proved to be unequal to the popular demand for it, and the legal contest with the telephone company had frightened off investors. With depleted financial resources, the Herald was unable to install equipment fast enough to meet its subscription orders. After three months, twenty-five hundred subscriber contracts had been drawn up, but the number of installations was not much over a thousand.⁵⁴ Soon the financial strain began to show. Employees were irregularly paid. The musical service ended abruptly one afternoon when the musicians refused to play any longer without salary. The newsroom staff of two editors and four stenographers departed a month later. Lacking capital funds, the service was suspended, and then entirely disbanded.⁵⁵

The history of the Telefon Hirmondó and its admiring imitator, the Telephone Herald, demonstrates that the notion of transmitting regular news and entertainment programming to large audiences existed well before the advent of twentieth-century wireless broadcasting. The existence of these two precursors did not generate any popular shock of recognition, however, or nurture any expert consensus that their efforts marked an inevitable path to the future. While the public was generally confident that something fantastic and all-embracing was germinating among the many remarkable contraptions of electrical communication, the boundaries of immediate possibility appeared much narrower to those closest to the technologies involved.

The historical development of mass broadcasting ahead of cable programming, which the Hirmondó more closely resembled, might have been reversed if radio had not been invented at a time when wire diffusion was still largely experimental. It was not immediately realized how significant a departure from telephony and telegraphy radio would be, however. As late as 1921, Walter Gifford, then four years away from assuming the presidency of AT&T, had difficulty visualizing separate roles for wired and wireless media in the twentieth century. He recalled in 1944:

Nobody knew early in 1921 where radio was really headed. Everything about broadcasting was uncertain. For my own part I expected that since it was a form of telephony, and since we were in the business of furnishing wires for telephony, we were sure to be involved in broadcasting somehow. Our first vague idea, as broadcasting appeared, was that perhaps people would expect to be able to pick up a telephone and call some radio station, so that they could give radio talks to other people equipped to listen.⁵⁶

Late in 1921 an internal Bell Telephone memorandum had projected the future of broadcasting simply as the transmission of important occasions, such as Armistice Day ceremonies or presidential inaugurations:

We can imagine the President or other official speaking in Washington . . . and that his voice is then carried out over a network of wires extending to all the important centers of the country . . . In each city and larger town there are halls equipped with loud speaking apparatus at which the people in the neighborhood are gathered.⁵⁷

If historical events had occurred in a different order and wire diffusion had been left unchallenged to develop at its own pace, that pace might have been a slow one. Through a combination of technical and economic constraints, wire diffusion might have evolved to suit the needs and interests of privileged minorities, filtering down only gradually to a wider population. By making the delivery of content cheaper and more democratic, wireless communication made mass audiences possible for electric media, and accelerated the development of programming of all kinds.

The Telefon Hirmondó was a hybrid of newspaper practices, conventional modes of oral address, and telephone capabilities that anticipated twentieth-century radio. In operation it was a transitional form using conservative techniques that looked backward to newspaper methods for gathering information, which it presented as spoken newspaper items. In its time it was seen as a novel newspaper form, but it was radically forward-looking in its continuous and regularly scheduled programming, the origination of some programs from its own studios, and the combination of news and entertainment in the same service. No other telephone diffusion experiments embraced a system of regular, timely programming like that of the Hirmondó. Most were limited simply to the reproduction of full-length 'occasions'.

Notes

- 1 'The electrical exhibition at Paris', *Electrician* (London) 3 December 1881; 'The International Exhibition and the Congress of Electricity at Paris', *Scientific American*, 10 December 1881, p. 377.
- 2 Edouard Hospitalier, *Modern Applications of Electricity*, trans. Julius Maier (London, Kegan Paul, 1882), p. 392.
- 3 *Western Electrician* (Chicago), 12 September 1891, p. 155.
- 4 *Invention* (London), 1 February 1896, p. 66.

- 5 *Lightning* (London), 9 July 1896, p. 38.
- 6 'Concert music by telephone', *Scientific American*, 10 October 1891, p. 225.
- 7 'Phonographic music transmitted by telephone', *Electrical Review and Western Electrician*, 12 September 1912, p. 567.
- 8 'Comic opera by telephone', *Western Electrician* (Chicago), 4 March 1899, p. 126.
- 9 'Telephone concerts in Wisconsin', *Western Electrician* (Chicago), 26 December 1896, p. 315.
- 10 Ibid.
- 11 'The telephone as entertainer', *Telephony* (Chicago), 18 May, 1912, p. 610.
- 12 'Base ball by electricity', *Electrical Review*, 24 July 1886.
- 13 Ibid., quoted from the *Detroit Free Press*.
- 14 'Long distance telephoning', *Electrical Review*, 3 August 1889, p. 6.
- 15 *Electrical World*, 5:1. See also 'Church service by telephone', *American Telephone Journal* (Chicago), 30 July 1904, pp. 65-6.
- 16 'The telephone at Christ Church, Birmingham, England', *Western Electrician* (Chicago), 11 October 1890, p. 195. See also *Electrical Review* (London), 14 (17): 7.
- 17 'Novel use of the telephone', *Western Electrician* (Chicago), 16 August 1890, p. 185.
- 18 'How electricity will help out the editor of the future', *Electrical Review*, 2 February 1889, p. 4. Verne's story is reprinted in Jules Verne, *Yesterday and Tomorrow*, trans. I.O. Evans (Westport, Conn., Associated Booksellers, 1965), pp. 107-24.
- 19 *Electrical Review*, 1 September 1888, p. 10.
- 20 'Wireless as a news carrier', *Electrical Review and Western Electrician*, 6 April 1912; p. 668.
- 21 *Electrical Review*, 17 November 1888, p. 5.
- 22 'Election returns by telephone and telegraph', *Western Electrician* (Chicago), 26 November 1892, p. 275; 'Election returns', *Electrical Review*, 19 November 1892, p. 151.
- 23 'Use of electricity in announcing election returns', *Western Electrician* (Chicago), 17 November 1900, p. 323.
- 24 Ibid.
- 25 M.D. Atwater, 'Distributing national election returns by telephone', *Telephony* (Chicago), 9 November 1912, pp. 721-4.
- 26 'The telephone and election returns', *Electrical Review*, 16 December 1896, p. 298.
- 27 Ibid.
- 28 *Electrical Engineer* (London), 4 September 1895, p. 233.
- 29 Ibid., 28 August 1895, pp. 206-7.
- 30 'Election night in New York', *Harper's Weekly*, 14 November 1896, p. 1122.
- 31 'The farmer and the telephone', *American Telephone Journal* (Chicago), 29 March 1902, pp. 202-3.
- 32 'War news in Chicago by telephone', *Western Electrician* (Chicago), 9 April 1898, p. 213.
- 33 'The telephone in the country', *Telephony* (Chicago), July 1905, p. 52.
- 34 'Telephoning is the national craze', *Telephony* (Chicago), December 1905, p. 52.
- 35 *Lightning* (London), 5 January 1893, p. 1.
- 36 Paul Adorjan, 'Wire-broadcasting', *Journal of the Society of Arts* (London), 31 August 1945, p. 514. See also *Electrical Engineer* (London), 19 July 1895, p. 57; *Electrician* (London), 9 June 1899, p. 243.
- 37 'The telephone in Hungary', *Scientific American*, 2 July 1881, p. 5.
- 38 John J. O'Neill, *Prodigal Genius: The Life of Nikola Tesla* (New York, Ives Washburn, 1944), pp. 45-6.
- 39 'The telephone journal', *Science Siftings* (London), 15 July 1893, p. 362.
- 40 Ferenc Erdei (ed.), 'Radio and television', in *Information Hungary* (New York, Pergamon Press, 1968), p. 645; 'Telephon-Zeitung', *Zeitschrift für Elektrotechnik* (Vienna), 1 December 1896, p. 741.
- 41 Thomas S. Denison, 'The telephone newspaper', *World's Work*, April 1901, p. 641.
- 42 W.G. Fitzgerald, 'A telephone newspaper', *Scientific American*, 22 June 1907, p. 507;

- Frederick A. Talbot, 'A telephone newspaper', *Littell's Living Age* (Boston), 8 August 1903, pp. 374–5.
- 43 Denison, 'The telephone newspaper', p. 642.
- 44 Toth Endréné (ed.), *Budapest Enciklopédia* (Budapest, Corvina Kiadó, 1970), p. 313.
- 45 Fitzgerald, 'A telephone newspaper', p. 507; Talbot, 'A telephone newspaper', p. 375.
- 46 'Telephon-Zeitung', *Zeitschrift für Elektrotechnik* (Vienna), pp. 740–1.
- 47 Talbot, 'A telephone newspaper', p. 507. By 1907 the list of foreign exchanges included New York, Frankfurt, Paris, Berlin, and London.
- 48 Jules Erdoess, 'Le journal téléphonique de Budapest: l'ancêtre de la radio', *Radiodiffusion* (Geneva), October 1936, p. 37.
- 49 W.B. Forster Bovill, *Hungary and the Hungarians* (London, Methuen, 1908), p. 111.
- 50 Erdoess, 'Le journal téléphonique de Budapest', p. 39.
- 51 Arthur F. Colton, 'Telephone newspaper – a new marvel', *Technical World Magazine* (Chicago), February 1912, p. 668.
- 52 'Order in the matter of the petition of the New Jersey Herald Telephone Company', *Second Annual Report of the Board of Public Utility Commissioners for the State of New Jersey* (Trenton, MacCrellish and Quigley, 1912), pp. 147–50.
- 53 Colton, 'Telephone newspaper', p. 669.
- 54 'An American telephone newspaper', *Literary Digest*, 16 March 1912, p. 529, quoting *Editor & Publisher*.
- 55 'Phone Herald's short life', *Fourth Estate*, 2 March 1912, p. 23.
- 56 William Peck Banning, *Commercial Broadcasting Pioneer: the WEAf Experiment, 1922–1926* (Cambridge, Mass., Harvard University Press, 1946), p. 59.
- 57 *Ibid.*, p. 60.