



The Telephone

Information Technology and Social Life

Feb. 9, 2005



Telephone as Literacy Tech.

- Track the telephone across the stages of literacy technologies
 - Restricted function
 - Adapted to familiar functions
 - New forms and possibilities
 - Affects older technologies
 - Authentication issues

Restricted - one-to-one connection; doctors; druggists; businesses

Exchanges - more business traffic

Familiar functions -

New forms- sociability - home - women's use

Older technologies - telegraph; face-to-face; letter writing

authentication - not as permanent as writing



Claude Fischer

- Department of Sociology at University of California, Berkeley
- Studied telephone 1876-1940
- Prior to phone, personal communication or messenger
- Sees telephone diffusion in four major stages
 1. 1876-1880 - Established system and secured business
 2. 1880-1893 - Bell monopoly
 3. 1894 - WWI - competition
 4. 1940 on - consolidation under AT&T



1876-1880 - Established system and secured the business

- March 10, 1876 - Alexander Graham Bell
- 1877 Bell Telephone Company
- Initial subscribers were for simple two-point communication
- 1878 - first switchboard in New Haven
- Hubbard - Lease equipment and license providers
- 1878 - Theodore Vail brought to manage Bell - expansion, patent protection, and business reorganization.
- Early competition from Western Union
- 1879-telephone number system; 2 letters and 5 numbers
- 1880- 30,000 subscribers

Invented 1876 - March 10 - Watson, a young electrician actually built it.

In the 1870s, two inventors **Elisha Gray** and Alexander Graham Bell both independently designed devices that could transmit speech electrically (the telephone). Both men rushed their respective designs to the patent office within hours of each other, Alexander Graham Bell **patented** his telephone first. Elisha Gray and Alexander Graham Bell entered into a famous legal battle over the invention of the telephone, which Bell won.

Bell - telephone - direct result of improving the telegraph

Gardiner Greene Hubbard - father-in-law

Bell sued Western Union for patent infringement and hurriedly founded exchanges around the country to preempt markets. At the end of 1879 the contestants settled: Western Union conceded Bell all patent rights and instruments. In return, Bell agreed to renounce telegraph service, to pay Western Union 20 percent of gross receipts for a time, and to grant the telegraph company partial interest in a few local Bell companies. The resolution left Bell in early 1880 with about



1880-1893 - Bell monopoly

- First subscribers, doctors, druggists, business
- Expansion
- 1885 - AT&T created as subsidiary to handle long distance; first line New York/Philadelphia
- 1887 - Vail leaves AT&T (only to return in next phase); 150,000 subscribers
- 1899 - AT&T becomes parent company of Bell System



1894 - WWI - competition

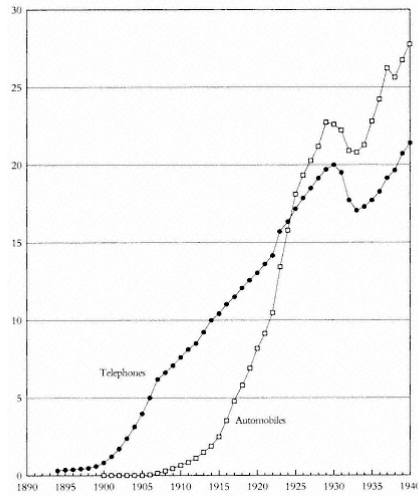
- Bell's original patents expired
- Growth of individual companies; farm cooperatives
- Maintenance of long-distance monopoly
- 1907 - Theodore Vail returns to AT&T - curtailed expenses by slowing down expansion, easing price competition, and conceding markets to the independents; touted universal service.
- 1907- 6 million subscribers
- 1913 - Natural monopoly; standardization of service
- Government regulation as a way to organize a "universal" system
- Party line system
- 1915 - 1st transcontinental line
- 1919 - first dial phones

In the roughly twenty years between the expiration of Bell's monopoly and World War I telephone service was transformed from a business tool and a luxury good to a common utility.

6,000 companies in a decade



Diffusion of telephone and automobile





1920-1940 consolidation under AT&T

- War and inflation increased cost of telephone
- Late 1920s more Americans buying cars, electricity and radio than phone service
- 1924 - 15,000,000 phone subscribers
- 1927 - 1st transatlantic line - \$75 for 1st 3 minutes
- Bell hesitant to adopt direct dialing; extolled value of human operators
- Rapid expansion led to poor service; customer complaints and distrust of monopoly
- Depression reduced subscribers - The subscription rate dropped from 41 to 31 percent of U. S. households.
- 1948 - 30,000,000 phones

First, modern women have been more isolated from adult contact during the day than men, so they have grasped the telephone as a device for breaking that isolation.³⁶

Second, married women's duties have usually included the role of social manager—making appointments, preparing events, staying informed about kin and friends and keeping them informed about the family, and the like; men neglect those tasks.

Third, North American women are more comfortable on the telephone than are North American men because they are generally more sociable than men.

"pervasive feminine culture of the telephone in which kinkeeping, nurturing, community support, and the caring culture of women forms a key dynamic of our society. . . ." This, therefore, is an instance of a machine, so often identified as masculine by its very nature, that men often shied away from but women aggressively turned to their own ends. Michèle Martin draws the further conclusion, that "women subscribers were largely responsible for the development of a culture of the telephone, as they instigated its use for purposes of sociability."



1940-

- Post WWII- 62 percent rate of residential subscription in the United States by 1950, 80 percent by 1962, and 90 percent by 1970
- Touchtone service in 1963
- 1971 - 100,000,000 phones
- Divestiture of AT&T in 1984 - created "Baby Bells"
- Mergers within Bell system; new companies created
- Was the new technology of the telephone, then, a means of building a wider and richer community? Or was it a seductive device that ultimately impoverished social life? Or both?
- "The telephone did not radically alter American ways of life; rather, Americans used it to more vigorously pursue their characteristic ways of life."