COMMUNICATION REVOLUTION OF THE 19TH CENTURY

During the 19th century, communication fundamentally changed from what was available at America's founding. From a society that communicated through voice, art, and the written word (letters, newspapers, and books), the country added a federal postal service, telegraphs, photographs, and telephones.

Oral and written languages were well developed long before America was founded, as was the printing press. Letters, newspapers, and books were also common to those who could afford them, although most Americans could not read or write. At its founding, the American government put a high priority on encouraging states to provide public education so that everyone could learn to read and write.

U.S. Postal Service Created

To spread the written word, the Second Continental Congress created the first American postal service in 1775 with Benjamin Franklin as the first postmaster general. Consequently, a federally funded and managed postal service was mandated by the Constitution, and in 1789, Congress passed an act creating the U.S. Post Office, starting with the 75 post offices and 1,800 miles of routes transferred from the original service. Its mission was to create and maintain postal routes, pick up and deliver mail on a regular schedule throughout the country, and interchange mail with foreign countries. The service was important in keeping people and businesses in all states communicating so that the states did not drift apart.

From this simple beginning, the postal service grew into a large and complex business. During the 19th century, stamps were introduced on letters in 1847; registered mail, showing that the receiver actually got the letter, started in 1855; postal money orders—a safe way to mail money—started in 1864; and postcards were first introduced in 1872. By 1896, mail was available to everyone in the United States, delivery being made to the person's closest point on a public road.

Telegraph Revolutionizes Communication

The first truly revolutionary development of the 19th century was the telegraph, which accelerated how fast the written word could be spread. In one gigantic step, it changed the delivery time of messages anywhere in the country from days or weeks to hours, and even to minutes for urgent messages. Tapping on a key to generate an electrical pattern of dots and dashes to represent letters in the alphabet, telegraph operators sent signals on a wire to other operators connected to the wire, who listened to the signals using a simple speaker and wrote the message. To be effective, telegraph wires had to be strung throughout the country, which was done by running wires along railroad tracks.

In 1844, Samuel Morse, the inventor of the first practical telegraph, sent the first message, called a telegram, from Baltimore, Maryland to Washington, D.C. using a coding scheme he invented to identify each letter and number called Morse code. Morse then created a company, which eventually became the Western Union Company, to build and operate telegraphs. By 1845, the first money order was sent as a telegram. By 1860, the telegraph was in most cities east of the Rocky Mountains, and by 1864, it connected the East to California and the Pacific Northwest. In 1867, the telegraph connected America to Europe using a cable on the floor of the Atlantic Ocean. From there, it spread to the rest of the world, providing the entire world with a means to communicate that required minutes rather than months to deliver a message.
Although everyone benefited from the telegraph, three types of businesses actually owed their success to it—the railroads, the newspapers, and the stock markets. None of the businesses could have achieved such a predominant role in American life without the telegraph. Railroads used the telegraph to schedule trains from station to station, allowing their trains to run faster and safer, also providing a telegraph office in each railroad station for people to send telegrams. Newspapers used it to receive national and world news each day by telegram, instead of the days or weeks it took to gather the news before the telegraph, creating a new business in news wire services. The stock market adapted the telegraph to create the ticker tape, a means to check the current price of a stock, and to give buyers and sellers an immediate way to participate in the stock market, creating the first national stock exchange. During the 19th century, the telegraph was crucial in keeping America's people, businesses, and governments in communication across the vast continent.

**Innovations in Photography**

The next major improvement in communication was the introduction of photography, providing visual ways to view information. As a graphic media, photographs offered a much more accurate method of recording physical events than paintings or written descriptions. From its original role as a recorder of landscapes and family portraits for future generations, photographs became a crucial part of recording the events and struggles of American life, creating a new form of reporting, photojournalism.

In America, the first widespread use of photography to document a major event was during the Civil War, particularly the pictures made by Mathew Brady, which are still considered some of the best photojournalism of all time. Another photographer, William Henry Jackson, photographed the mountains of the West, particularly in the part of Wyoming that is now Yellowstone National Park. His pictures helped persuade Congress to designate the area a national park. In the late 1880s, Jacob Riis used photographs to expose the horrible living conditions in the slums of New York City, which finally caused the city to begin efforts to improve conditions there.

In 1888, George Eastman introduced the Kodak box camera, founding the Eastman Kodak Company to produce it. The Kodak was the first camera designed to be used by the general public rather than by professionals. It was lightweight, easy to operate, and used film cartridges that were sent to Kodak for developing and printing after the pictures were taken. And most importantly, it was inexpensive. The Kodak camera was an instant success with people everywhere.

The last major communication device to be invented and commercialized during the 19th century was the telephone, which extended voice communication across the continent and the world. In theory, the telephone simply replaced the telegraph key with a microphone and a receiver, but a lot of new technology was actually required to make it practical. Unlike the telegraph, telephones needed to be conversational, personal, and private, which required dedicated lines that appeared to be for individual use when they were actually carrying many simultaneous calls. They also needed miniaturized microphones and speakers and a system to locate, notify, and connect the parties to a phone call, which led to the invention of the telephone exchange.

**Telephone Takes Communication Global**

Alexander Graham Bell first demonstrated a workable telephone in 1876. However, several years were required to establish a complete telephone system, particularly the telephone exchange. Early versions of the telephone exchange were switchboards containing a port (a place to plug in a jack) for each phone supported by the exchange. When a call came in, an operator connected the caller's port to the port of the party being called and notified them with a bell. The exchange created a new vocation for women of the era—telephone operators. Once a workable telephone exchange existed, the market exploded, and the telephone became an indispensable part of American life.
Initially, the telephone supported groups of customers in such local areas as towns or counties, with customers often sharing their connection with others in a party line. Customers wanted expanded service, but the organizational complexities of long-distance service proved too much for local telephone companies. Instead, the American Telephone & Telegraph Company (AT&T) created long-distance service to places in America and around the world, developing the needed technology, standardizing the connections, allocating telephone numbers, and operating the long distance lines. At first, the company did not offer local services, but eventually, it bought out the local phone companies, becoming a full-service telephone company.

In addition to the new products introduced for communication in the 20th century, all of the products introduced in the 19th century continued to develop new technologies to make their products better and to expand into new markets. The post office started handling small packages in 1913, which not only helped individuals but also provided crucial services for a whole new industry, the mail order business. In order to speed delivery, the post office started sending mail by air that same year, eventually leading to Express Mail, an overnight mail delivery service. The postal service still plays an important part in American communications.

Telegrams are still sent today, but they are mostly used for such special purposes as birthday greetings or money orders. The Western Union Company is now a financial services company, transferring money throughout the world.

Photography became more specialized, with cameras becoming even easier to use and more versatile, including some cameras that instantly developed the picture in the camera and others that used digital images instead of film. For business, photography provided new approaches to advertising and publishing. For science, it offered a way to document experiments, observe astronomical events, and analyze subjects undergoing rapid movements. Photojournalism also became the principal means of reporting news events.

Telephone services have expanded greatly, adding such services as automatic switching; number dialing; and a host of new services like answering machines, FAX machines, and the Internet. With the recent introduction of wireless technology, the telephone is even more indispensable.

Contrary to the effect of most new technologies, the impact of the post office, telegraph, photography, and the telephone has been almost universally positive, with little pollution, mostly acceptable working conditions for workers, and a superb ability to adapt to the changing technologies and needs of people in the following centuries.

Jim Marshall

Further Reading

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