TELECOMMUNICATIONS HISTORY GROUP

CONNECTIONS news

www.telcomhistory.org
Fall 2024, Vol. 31, no. 3

303-296-1221
Dave Felice, editor

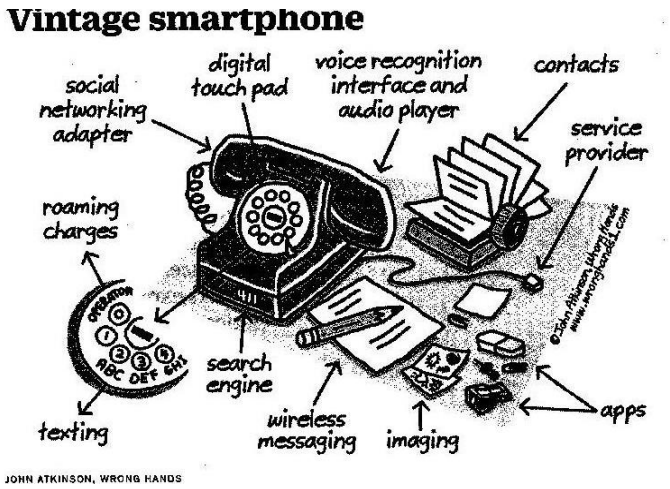
A Message from Our Director

Once again, Telecommunications History Group members demonstrated remarkable generosity by participating in the matching funds Challenge Grant. Your membership and contributions enable the organization to continue and improve its mission to preserve the history of telecommunications! The Challenge Grant was a magnificent success.

In this newsletter, you'll learn how a Texas company ended up as part of Mountain Bell territory. There are stories about the Blizzard of '88 and the history of emergency calling.

In Denver volunteers continue to be busy processing collections and documents. We've also been conducting a few tours.

Seattle volunteers are welcoming an increasing number of visitors.



Have a wonderful fall, and thanks so much for your support and love of our history!

Renee Lang, Managing Director

Donate and get involved with THG

The Telecommunications History Group, Inc. is a 501 (c) (3) non-profit organization that depends on the support of generous individuals and organizations just like you. We are lucky to have a group of amazing volunteers, some retired telecommunications workers and some with a simple passion for history, but our organization still relies on fundraising to cover operational expenses, advertising, and expenses related to organizing and preserving collections.

At THG, we have a wide variety of telephone equipment, memorabilia, and historical documents. If you have items worth donating to the Connections Museum in Seattle or Denver, or our Denver Archive, please send e-mail to telcomhist@aol.com or complete the online form at the THG web site, https://www.telcomhistory.org/contact/.

THG appreciates and depends on volunteers for helping with a myriad of tasks and projects. If you have time to donate and are in the Denver or Seattle areas, contact THG and we'll get you involved! Volunteer activities include research, preservation, inventory, database entry and management, repair of antique equipment, tour conducting, educational speaking and oral history collection. The work is performed at THG Denver and Seattle locations.

https://www.telcomhistory.org/ E-Mail: telcomhist@aol.com
https://www.telcomhistory.org/contact/ Phone: 303-296-1221

Back issues of the Connections newsletter at https://www.telcomhistory.org/thg-newsletters/

Individual membership dues are $35.00 per year. To enroll as a member, send your name, full postal mailing address including Zip Code, e-mail address, and check or other payment information to Telecommunications History Group, Post Office Box 8719, Denver CO 80201-8719. You can also enroll online by sending your information to telcomhist@aol.com.

Birds answer the phone in Maryland community

The expression "for the birds" has new meaning in Takoma Park, Maryland. Artist David Schulman re-purposed an old pay phone to enable people to hear local birds. Pushing the dial buttons also gives users a brief description of the birds. No coins are required to activate the phone.

City officials say the public art installation gains popularity by the day. To highlight the phone, the city installed some red and blue banners. For those intending to visit, the bird phone is at 8000 Flower Avenue. One of the sounds features Roscoe the Rooster, who roamed Takoma Park in the 1990s. Other buttons present a yellow-crowned night heron and a red-tailed hawk. Schulman got help from the Cornell Lab of Ornithology to create the interactive artwork as part of a public contest.

More at: https://www.youtube.com/watch?v=_2yNnpZqbGU

Company boundaries follow strange lines

A small area of far southwestern Texas holds an unusual position in the annals of telephone company formation and restructuring.

In 1981, Jim Grisenti of Mountain Bell Public Relations pointed out that El Paso County was part of Southwestern Bell territory two times in history. But phone service was also provided by several independent companies before jurisdiction of the area was settled. The final major change, before Divestiture, happened in 1982 when Mountain Bell essentially sold El Paso to Southwestern.

"Two years after the first trains pulled into town, El Paso's first telephone exchange was established with 40 subscribers by the Erie Telephone Co. on September 20, 1883," wrote Frank Merriman of Mountain Bell. "While El Paso was following the road to rapid growth...El Paso's telephone system was expanding to keep pace with requirements for communications."

Tri-State complex corporate structure
(from the THG archives):

Tri-State was a relatively large company. It was a fully owned subsidiary of the Colorado Telephone Co., formed to operate exchanges in New Mexico, Arizona and Texas and to bypass regulation by the Colorado Public Utilities Commission.

Tri-State was a company on paper, but in 1911, AT&T mandated the company be merged with Colorado Telephone and Rocky Mountain Bell to form Mountain States Telephone and Telegraph. Technically, the new Mountain States Co. purchased Rocky Mountain Bell. Tri-State stock was issued to a group of Colorado Telephone Co. executives. The Tri-State company continued, on paper, until 1919.

Southwestern Telephone and Telegraph, a Bell company, bought Erie in 1900. A year later Southern Independent Telephone Co. began competing with Southwestern. People had to subscribe to both systems for complete coverage.

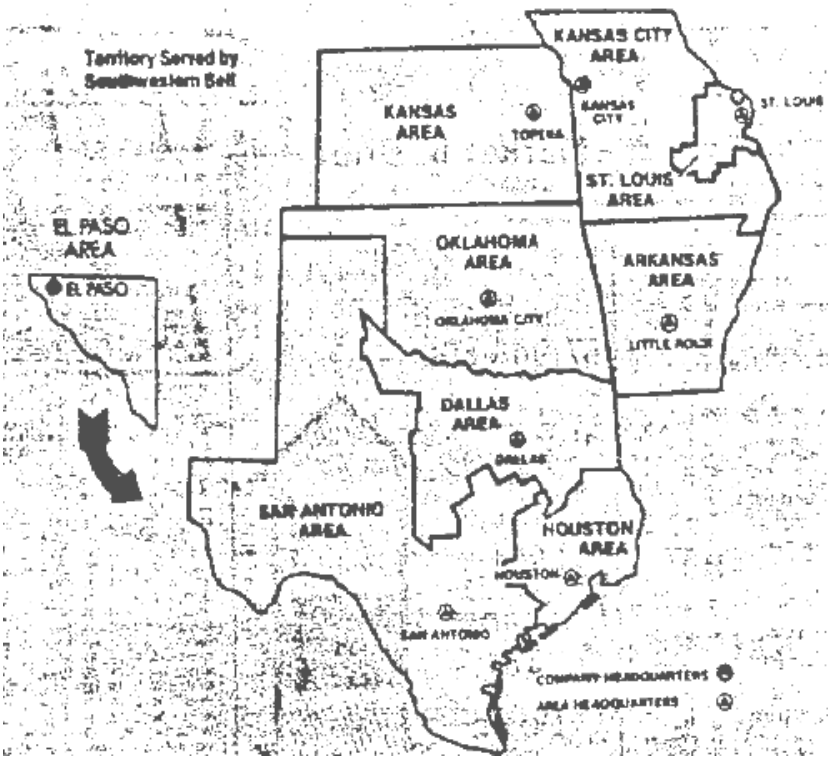
Growth in the community of interest required better communications. Businesses formed Tri-State Telephone and Telegraph, serving West Texas, Southern Arizona and Southeastern New Mexico. Tri-State acquired El Paso from Southwestern. Because of Texas tax regulations, a new corporation had to be formed and Tri-State became a subsidiary of Mountain States.

In 1920, Tri-States and Mountain States merged. The El Paso territory officially became part of the Bell System under the Mountain Bell name for the next 61 years.

El Paso got commercial long distance service with connections to Denver in 1910. Dial service was introduced in 1947. By 1960, Mountain Bell installed its 100,000th phone in the county. An Electronic Switching System (ESS) was installed in 1971. By 1980, with continued growth, 88 percent of El Paso households had a telephone. Operator cordboards – a long time telephone symbol – were replaced by the Traffic Service Position System (TSPS) in 1978. Mountain Bell opened five PhoneCenter stores in El Paso during the mid-1970s. The city and county got centralized 9-1-1 calling in 1979.

The Mountain and Southwestern Bell subsidiaries started negotiations in 1981, leading to the transfer of El Paso County operations. Mountain Bell President Robert Timothy said the sale, at net book value of $172 million, would streamline the regulatory process for both companies. New Federal Communications Commission rulings required Bell companies to form subsidiaries which would separate regulated and unregulated business activities by March 1982. "By realigning El Paso County with Southwestern Bell, both companies will be organized more effectively to serve our customers and prepare for the future of our business," said Timothy.

The final sale agreement had to be approved by the FCC, the Texas Public Utilities Commission, AT&T, and the Boards of Directors of Southwestern and Bell. El Paso civic officials initially expressed objections to the sale because of potential rate Mountain increases. Southwestern then agreed to continue Mountain Bell rates for a year after the sale.



Most of El Paso's 1,200 employees transferred almost seamlessly to the new company. Southwestern Bell contracted with Mountain Bell for services including service order issuance, billing, and some complex network services.

At Divestiture – the federal court ordered breakup of the Bell System – El Paso's telecommunications continued as part Southwestern, one of the seven new "Baby Bell" telephone operating companies. Southwestern was an AT&T subsidiary formed from a combination of independent and Bell companies.

In 1995, Southwestern was re- branded as SBC Communications to position the company nationally. Four years later, the name changed again to SBC Global Network. Through acquisitions and restructuring, SBC Communications eventually became large enough to buy AT&T and take the name of the former parent company in 2005.

Geographically, El Paso County is an anomaly. Surveyors and mapmakers generally prefer straight lines. Instead, a triangular section of far southwest juts into what would be the straight vertical eastern border of New Mexico. The Treaty of Guadalupe Hidalgo, ending the Mexican-American War (1846-48) put the territory in the United States. The Compromise of 1850, intended to define slave-holding areas, set the El Paso triangle in Texas side of the New Mexico border. The city of El Paso is across the Rio Grande River from Ciudad Juarez, Mexico.

This story, by Dave Felice, is based on original material from Mountain Bell Public Relations: Frank Merriman in El Paso, Jim Grisenti, Rick Hays, Cyndi Evans, and Larry MacFarlane in Denver. Archivist Jody Georgeson researched the documents held at the THG Archives in Denver.

Emergency dialing becomes part of culture

The ubiquitous 9-1-1 phone number for emergency assistance is a contemporary development, and took a while to get where it is. Even after its adoption by Congress as late as 1999, the number was not universally standard for many years.

Alabama House Speaker Rankin Fite made the first "official" 9-1-1 call in 1968 in the town of Haleyville, answered by the state's U.S. Representative Tom Bevill.

A similar central dispatch system had been adopted in the United Kingdom decades earlier, in 1936. The number 999 connected callers with UK emergency telegraph and phone communications.

At the urging of fire departments around the U.S., the Federal Communications Commission decided in 1967 to establish a single, simple number to be dialed for fire and other emergencies. Jurisdictions implemented the service at differing stages, and it was decades before the service became standard. Now 98 percent of the 330 million people in the U.S and 40 million in Canada can use the number.

AT&T recommended the number because it was easily remembered and, critically, had not been assigned as an Area Code or for any other service. At first, the number was written without hyphens. The punctuation was added to avoid misunderstanding. The story is told about a woman in Denver who didn't call for help because she couldn't find eleven on the dial.

There is also speculation that terrorists hijacked four airplanes in the U.S. on the date 9/11/2001 because of the number correlation with distress calling.

The photograph shows a typical community emergency dispatch center. In large municipalities, the call center can occupy entire floors or even a separate building.

Independent phone companies initially were not part of the emergency calling plan. Alabama Telephone implemented service ahead of AT&T. The inaugural AT&T system went into service in Huntington, Indiana in March 1968. Canada began its 9-1-1 conversion in 1972. Mexico started its service in 2016. Caribbean Islands in the North American Number Plan (NANP) use 9-1-1 for emergency calls. Argentina and Saudi Arabia have 9-1-1 calling; the number is 1-1-2 for most of Europe, Russia, and Western Africa.

In North America, Enhanced 9-1-1 can provide a caller's location, based on information from a master database, maintained by the telephone companies. Cellular telephones are located by some form of network radiolocation or from the Global Positioning System in the phone. Calling from a private branch exchange (PBX) can require different dialing. Workers in large office buildings get federally-mandated annual reminders on how to call for emergency. Since 2019, multi-line phone systems are required to reach 9-1-1 without dialing a prefix.

The systems in some jurisdictions are sophisticated enough to route calls from one dispatch center to another, even from different cities or states. For example, in Vermont, all calls are routed to a central dispatch center in Montpelier. The location can be immediately determined and the call routed to the local services in any town.

The process of connecting to emergency providers can get complicated when traveling through different countries. Many U.S. based cellular phones, not set up for international calling, cannot dial 999 in Britain to reach emergency. This sometimes requires alternative dialing arrangements or using the full phone number of the local provider. It is beneficial for international travelers to know the emergency phone number at their destination.

Modern cellular phones are programmed to be capable of making an emergency call even if there is no calling service associated with the phone. Technological innovations result in continued improvements, such as Computer Aided Dispatch and connections through Voice over Internet Protocol (VoIP, also known as computer-originated calling).

Reverse 9-1-1 enables emergency agencies to initiate notification calls in a certain geographic area. This system was used in situations such as the mass shooting at Sandy Hook, Connecticut in 2012 and subsequent similar events around the country, including weather disasters. The call notification process is typically used in conjunction with the Emergency Alert System (EAS), the successor to CONELRAD and the Emergency Broadcast System. With EAS, authorized public officials can send notifications by cable, terrestrial broadcasting, and satellite.

In recent years, officials have found that widespread use of cellular phones and cellular services, emergency messages in either direction are subject to disruption. If commercial power to a cellular tower goes out, there essentially is no phone service. There have been confusing instances when people have been advised to "use a landline phone." Sometimes there is no traditional wired phone with power from a Central Office, or worse, would-be callers don't know what a landline phone is.

Text to 9-1-1 has been supported by the major mobile carriers since 2014, but only about 20 percent of call centers nationwide provide such support. As is the case with other implementations, government officials cite a lack of funding at either local, state, or federal level.

The three-digit emergency number spawned other services,

- 211 - services and information
- 311 - municipal government, non-emergency
- 411 - directory assistance, "information"
- 511 - traffic information, police non-emergency
- 611 - telephone service and repair
- 711 - TDD (teletype) and relay services for hearing impaired
- 811 - underground utility location (in U.S.); non-emergency health (Canada)
- 911 - immediate emergency services (police, fire, ambulance, rescue)

With all the three-digit N-1-1 assignments, the telephone industry and the FCC selected 9-8-8 in 2020 as the number for the new Suicide and Crisis Lifeline. Making this switch required changes in 7-digit prefixes, or a switch to 10-digit dialing for 82 locations covered by the North American Numbering Plan. In North Dakota, the prefix was eliminated.

Although 9-1-1 calling is less than six decades old, it has become culturally ingrained.

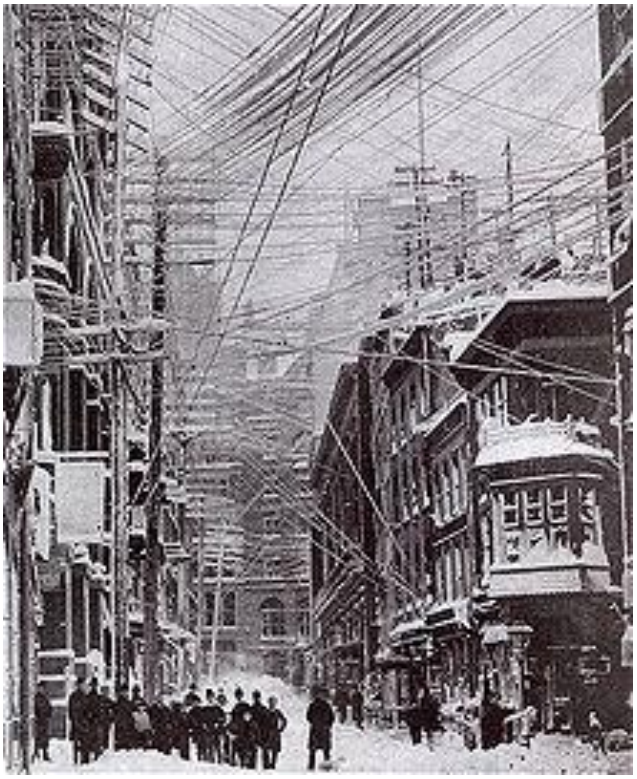
Story by Dave Felice

Blizzard brings changes to telecommunications

The great New England "Blizzard of '88" leaves an enduring telecommunications legacy beyond just a famous painting of a telephone lineman in the snow.

The massive winter storm hit the Northeast on March 11, 1888. Four-hundred people died. The huge storm dumped up to 55 inches of snow in some areas. From Washington, D.C. to Maine, the storm affected one quarter of the U.S. population. The storm was unusually potent even for a location known for bad weather.

The storm isolated many areas, especially those which had quickly come to depend on the new telegraph and telephone facilities. In cities, telephone lines above the streets were a chaotic tangled mess.



Disruptions in communications and transportation brought big changes to urban areas. In Boston, long-term recovery from the storm hastened planning and completion of the country's first subway system, about nine years later. Motivated by crippling effects of the blizzard, New York officials also accelerated development of the nation's largest subway.

In most larger cities, there was a major incentive to bury communications cables as quickly as possible. Above-ground water and gas lines posed serious problems in urban areas.

People were trapped in their homes for days. Rail service practically came to a halt. Even walking was treacherous, where there were no paths, sidewalks, or roadways.

Maintaining telephone service in such a blizzard was demanding and tireless work. The heroism of Angus Macdonald, a 23-year-old immigrant from Nova Scotia, was memorialized in a well-known painting.

A new, above ground open wire long distance line had recently been completed to provide vital telephone communication between new York and Boston. When the storm threatened the important line, Macdonald and his co-workers patrolled the line in Connecticut on snowshoes, repairing any down wires. Macdonald and other linemen also managed to provide food and beverages for passengers stranded for two days on a stalled train. On other trains, most passengers had to scavenge what they could find in the baggage car stock.

Prominent artist Frank Merrill of Boston illustrated the event later in 1888, depicting Macdonald on line patrol in blinding snow. An oil rendition commissioned by AT&T in the 1940s came to symbolize the "Spirit of Service" of phone workers in the blizzard of '88.

In the early 1970s, Boston-area resident Judd Caplovich collaborated with NASA meteorologist Paul Cozin to document what became an astonishing history of the storm. Caplovich eventually produced a hefty book about the stories he gathered over many years. In 1988, *Yankee Magazine* published an extensive multi-page article summarizing the information Caplovich had collected in a story called "He's Buried in the Blizzard of '88." That article was republished online in 2015.

Angus Macdonald's grandson commented on the re-publication. Ronald Macdonald suggested Caplovich overlooked phone line maintenance: " I was surprised when I read the book he (Caplovich) did so much research on not to find a reference to the 'Long Lines' heroes."

Ronald Macdonald says he still has the black-and-white photographs and other artifacts used in production of the painting. Ernest Hamlin's "Spirit of Service" later hung in the 2nd Floor lobby of AT&T headquarters in New York City.

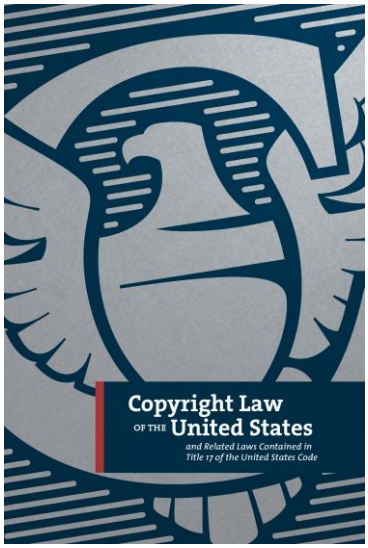
The Blizzard of '88 paralyzed the entire area, extending as far as maritime provinces in eastern Canada. Snowdrifts 50 feet high were common. Rail and road transportation was hampered or impossible for several days. Firefighters were unable to get out of their stations, and damage from fire reached into the millions.

Over 200 ships were grounded or wrecked. Melting snow after the storm caused severe flooding in some places, especially the low-lying area of Brooklyn.

The storm began to abate just three days later. Full recovery took several months. The "Great White Hurricane" of March 11-14 is still seen as one of the most severe blizzards in American history.

Original story by Dave Felice, with material from various sources

Telecommunications mirrors copyright complexity



Copyright and patent law intricacies show why pioneers of telecommunications spent so much time and money in litigation.

A new book by David Bellos and Alexandre Montagu, *Who Owns This Sentence*, makes the case that copyright has mutated far beyond its original scope. The authors argue there might be more equality and creativity if copyright returned to its "its original purpose of providing limited support for living creators."

For example, Bellos and Montagu cite the case of how a court ruled Samuel Morse could patent a method, but not a discovery. Saying electric current carried signals by wire was not sufficient to earn a patent. Similar arguments were presented and interpreted in lawsuits filed for and against Alexander Graham Bell, Elisha Gray, and many others involved in telecommunications growth.

The sweeping U.S. Copyright Act of 1976 and its amendments, including the Digital Millenium Copyright Act (DMCA, 1998), resulted in the growth of Intellectual Property protection (I.P.). According to Bellos and Montagu, I.P. now governs just about every aspect of modern life, stifling creativity and reducing earning opportunities. The authors argue that governing I.P. is a growth industry within itself. Citing Dean Baker's 2018 book on copyright and inequality, Bellos and Montagu note that sixteen of the world's fifty richest people now derive their fortunes from copyright matters.

Who Owns This Sentence traces copyright from movable type through 18th-century London to modern times. The concept originally governed which printers could print which written works. Unbound by English and French law, printing began to thrive in Scotland and Belgium. The Berne Convention of 1886 was the first serious worldwide codification of copyright and is still standard.

Bellos and Montagu write about how "principled arguments" nearly wiped out copyright restrictions at the end of the 19th century. The issues returned in the Copyright Act of 1909. The "creep of copyright" extended to software in 1978, even though many programmers opposed it.

Patents were at the heart of telephone technology from its beginning, when Bell got to the Patent Office before Elisha Gray. But according to Bellos and Montagu, copyright provides greater proprietary control. They say anyone who expects to get rich from a patent would be better advised to "buy a lottery ticket at the corner store."

In 1888 the Supreme Court upheld the patents belonging to A.G. Bell. As if to support the Bellos-Montagu argument on stifled creativity, over 6,000 independent telephone companies began operating when Bell patents expired in 1924. The 1956 Consent Decree limiting Bell System operations required AT&T to make all its patents free of royalty payments. Almost a century of arguments about vertical integration and natural monopoly closed with the court-ordered Divestiture Decree which broke up the Bell System in 1984.

According to Bellos and Montagu, copyright rests on complex legal determinations. They say the entire process might be subject to revision, even though "the squeals of pain would only be evidence of a lack of imagination."

Who Owns This Sentence is copyright 2024 and printed by W.W. Norton and Company of New York. It is a *New York Times* Book Review Editors' Choice and *New Yorker* best book of the year.

Commission seeks increased cellular competition

The Federal Communications Commission proposes to require cellular carriers to follow a standard process of "unlocking" cellular phones after 60 days.

According to an FCC statement: "New unlocking rules would allow consumers the freedom to take their existing phones and switch from one mobile service provider to another more easily as long as the phone is (network) compatible. Unlocking can increase consumer choice and competition in the mobile service provider marketplace."

Currently, carriers have a variety of unlocking policies and practices. Some providers voluntarily follow guidelines set by the CTIA (originally Cellular Telecommunications Industry/Internet Association). Other carriers may have more stringent rules, based on purchase or service commitments, or requirements of specific cellular operating frequencies.

The FCC proposes that all carriers adhere to the same unlocking standards and resources, specifically by requiring all providers to unlock mobile phones 60 days after activation. The Commission also seeks comments on how the proposal would impact incentives, discount programs, and the potential benefits to more carriers and phone suppliers.

The impact of proposed standards on existing service contracts would presumably be clarified in any FCC decision.

Currently, Verizon unlocks phones after 60 days. AT&T and T-Mobile have specific requirements. U.S. Cellular sells most of its phones as unlocked devices.

A locked phone has an internal software code that limits the operation on a specific network, while unlocked phones can generally be used on any mobile network. Locked phones are sometimes less expensive because the user must maintain a service contract. Unlocked phones are often better for travel, since switching networks is a matter of installing a different SIM (Subscriber Information Module).

"The end of wireless contracts finally opened the door for (consumers) to more easily shop around for alternative wireless carriers," writes Marguerite Reardon of CNET media. "But the software locks that carriers put on phones restricting its use on other networks still prevent many consumers from having total freedom when it comes to choosing a provider."

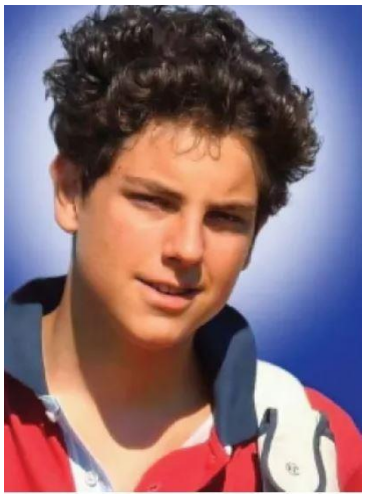
In Europe, and most of the rest of the world, the service model has always been different. Major continental carriers use the GSM connectivity standard, making it easier to use the same handsets across national borders. Only two U.S. providers use GSM, but the service is sometimes subject to restrictions. European carriers also operate in a smaller range of frequencies, making it less complicated to provide a SIM for different carriers.

U.S. carriers have service on a wide range of frequencies, so supporting extra bands is a financial hurdle. There also be no guarantee that an unlocked phone on one carrier will operate properly on a different network. Or, the network itself can be isolated as some carriers did for Mexico and Canada. At one point, travelers outside the U.S. in North America needed two different handsets.

FCC commissioners have not indicated when they intend to make a final decision.

Catholic church set to get millennial saint

The modern technology era reaches a milestone with the impending designation of an Italian teenager as the first "internet saint" of the Roman Catholic Church.



By certifying a second miracle attributed to Blessed Carlo Acutis, Pope Francis paves the way for a formal declaration the young man has achieved the highest level of religious holiness known as sainthood.

Acutis is known as a computer prodigy who used technological skills to spread awareness of the Church. Because of his talent, Carlos became known as "God's influencer."

His mother is often quoted as saying Carlos wanted to show people that the internet can be used effectively for good purposes.

Acutis was born in London. He died in Monza, Italy, in 2006 at age 15. He is buried in Assisi. Pope Francis will convene a Consistory of Cardinals (senior clergy) to certify the canonization.

The miracles attributed to Carlos involve the healing of a Brazilian boy from pancreatic failure and the recovery of a Costa Rican girl from head injuries in a bicycle accident. His canonization is seen as helpful to church efforts to connect with younger generations in the digital age.

In the religious tradition, there are two "patron saints" of telecommunications. Gabriel the Archangel is known as a messenger of the deity. St. Clare of Assisi, a cloistered nun, is believed to have the ability to be in two places simultaneously. By extension, Clare is recognized for a gift of long-distance communication.

Australian radio station a tourist attraction

This photo shows the building housing radio station 2BH in the far west Outback, New South Wales, Australia.

The round first floor windows, simulating a radio receiver, are labeled left-to-right as On/Off, Tone, Tuning, and Volume.

The 500W AM station, at 567KHz, has served the region around Broken Hill, NSW for 90 years. The mining town is located near the border with the state of South Australia. Some tour buses include a stop at the building. The upper floor houses a museum of broadcast equipment most of which was made in Australia.

(Courtesy of Barry Mishkind, "The Eclectic Engineer", www.oldradio.com.)

TELECOMMUNICATIONS HISTORY GROUP