

A Brief History Of Cellular Communication

I t all began, not on land, but at sea. As the century turned, ships sailed worldwide waters with new cargo: mobile radios. For the first time, captains and navigators could communicate with other ships . . . as well as with those left on land.

A short time later, mobile radio touched shore. Police officers were among the first to use the new equipment—they could call headquarters and other police cars while chasing suspects.

As the decades passed, scientists explored the possibility of mobile radio for commercial applications. Was it an alternative to the telephone? Was nationwide service feasible?

The answers to these questions came slowly at first. But once scientists devised a way to bring radio communication to large numbers of people, the pace quickened.

Throughout the fifties and sixties, new technologies were introduced. Systems were lifted from lab to commercial world. And people started talking over mobile telephones.

In the last twenty years, mobile communication has at times equalled — then exceeded—the vision that scientists foresaw. Nationwide service is well within reach, and there's talk of a worldwide network. To think that it all began with a simple radio at sea.



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EARLY 1900's

Mobile radios help maintain law and order in the metropolis. The first units are installed in Detroit and New York City police cars. Available channels are soon filled to capacity.

1947

"Cellular" notion born at AT&T Bell Laboratories. Breaks down large geographical areas into smaller zones called "cells." When radio waves are kept within a cell, the frequencies can be reused, and service is available to many people.

AT&T Bell Laboratories
announces
the birth of
Cellular Communication

1940

New frequencies added to the radio spectrum increase the number of channels available for police radio communication.

1946

First commercial mobile telephone service introduced in St. Louis. Subscribers find it difficult to get dial tone and complete calls.

1950s and 60s

Mobile telephone talk fills the air. More and more frequencies are added to meet heavy demand . . . AT&T explores the possibility of a "broadband" system that could serve more customers on existing channels.

1962

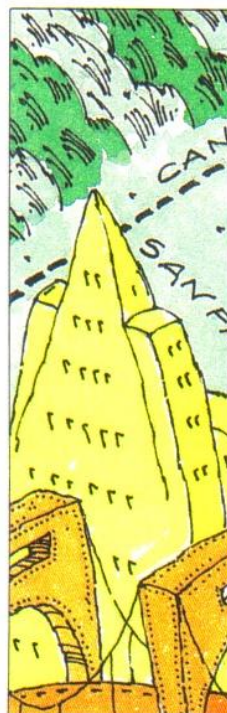
AT&T Bell Laboratories demonstrates the first experimental UHF cellular system to the FCC at Murray Hill, New Jersey.

1964

AT&T's MJ mobile telephone system changes the face of radio communications. For the first time callers can dial direct — just like on a regular telephone. No more push to talk operation.


1968

FCC calls for new ideas improve the quality and efficiency of mobile telephone service.



Tom Waters

1969

AT&T's Improved Mobile Telephone System just about matches the quality of landline telephones. But access remains a problem: Only 25 channels—capable of handling one call at a time—are available.



1970

FCC dedicates some UHF-TV frequencies to mobile telephone use.

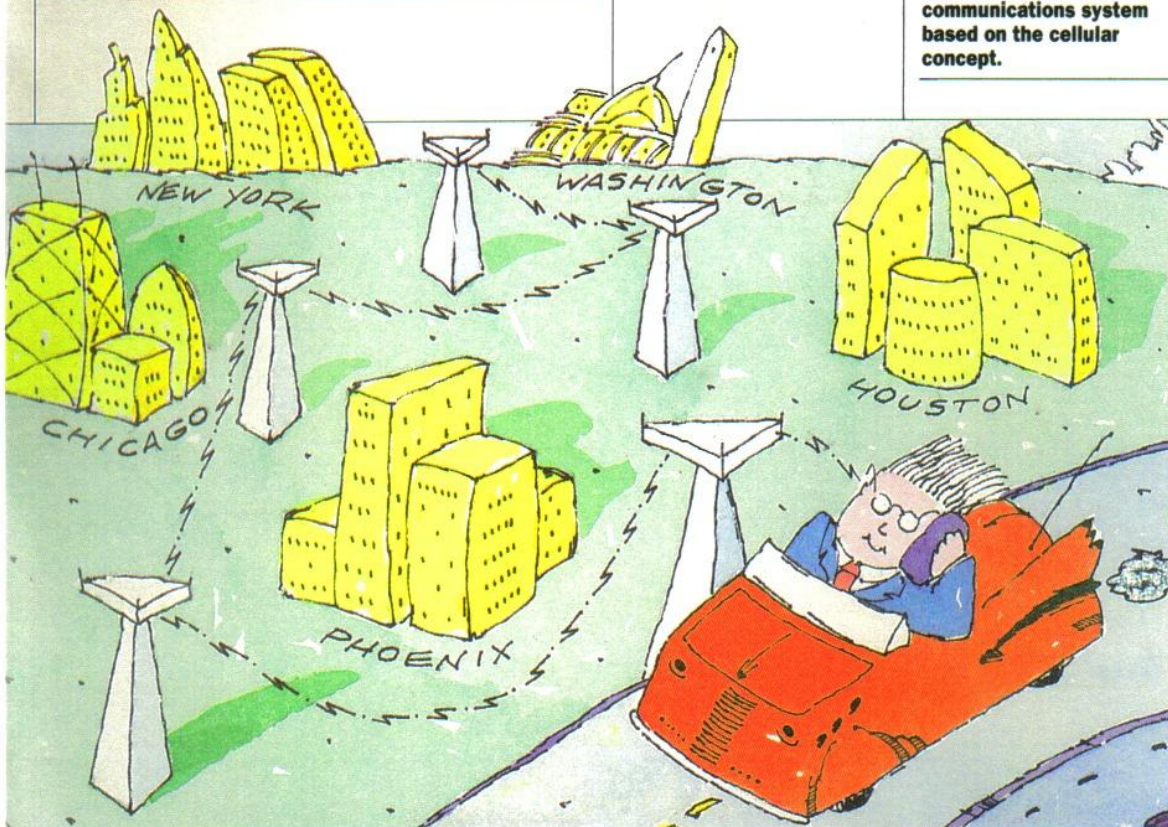
1971

AT&T proposes UHF high-capacity mobile communications system based on the cellular concept.



1974

Frequencies set aside for coast-to-coast cellular communications network... Others begin developing cellular systems... AT&T excluded from mobile telephone and radio equipment markets.

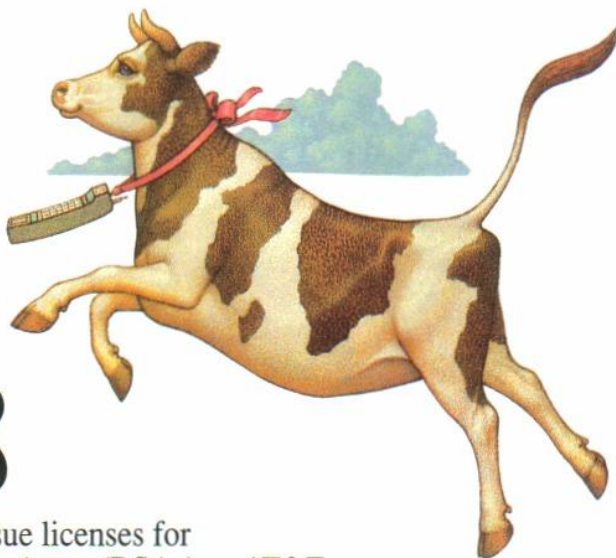


1978

AT&T Advanced Mobile Phone Service (AMPS) trial begins in Chicago. One hundred mobile telephones are put into use by Bell System employees.

1988

FCC begins to issue licenses for 434 Rural Service Areas (RSAs). . . AT&T and Ameritech Mobile demonstrate digital cellular technology in Chicago . . . U.S. cellular subscribers top two million.



Edward S. Goren

1979

AMPS trial offers service to 2,000 people in Chicago. Thousands crowd the waiting list for service.

1981

AT&T reenters mobile telephone and equipment business . . . American Radio Telephone Service begins trial in Washington, D.C. using Motorola equipment.

1982

FCC accepts applications to offer mobile telephone service in the top 90 Metropolitan Statistical Areas (MSAs).

1983

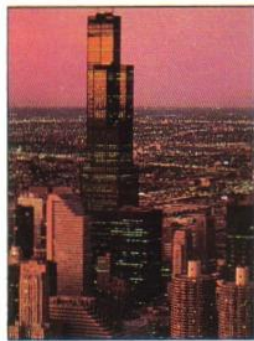
Commercial service begins in Chicago using AT&T's Autoplex® System 100.

1984

CELP speech coder invented at Bell Laboratories. Helps squeeze more cellular conversations within allocated frequencies.

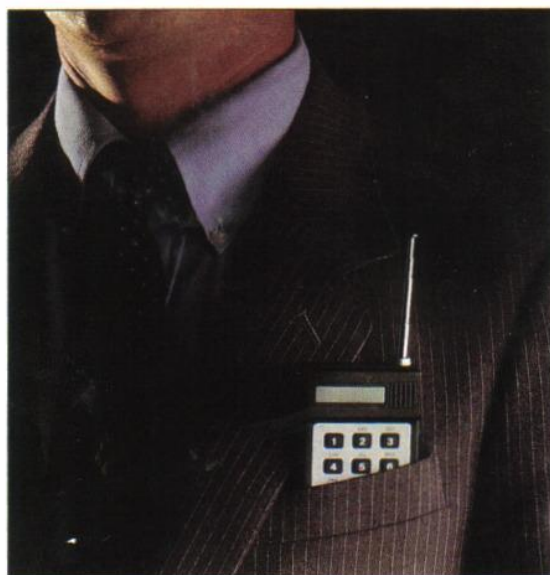
1975

Chicago targeted as the demonstration site for the new AT&T cellular system.



1977

AT&T tests "small cell" systems offering greater range in Newark, New Jersey . . . Washington, D.C. area set for trial of Motorola's Dynatec system.



1990's

Digital standards established for cellular, opening the way for growth, new services, and better transmission quality.

1986

Autoplex System 1000 commercially available . . . Lottery for MSA licenses concludes . . . AT&T withdraws, again, from mobile telephone equipment market.

1989

Rapid cellular growth continues . . . New AT&T system serves 135,000 subscribers . . . Cellular associations choose digital standards.

PREDICTION

10 Million

Subscribers

Expected By

1993

David Arty

AT&T Bell Laboratories

Marc Romanelli/The Image Bank