
Everyday Life

Might of the Speeding Word, By David Sarnoff

Excerpted from his article in a special "World's Fair Section" of *The New York Times*, March 5, 1939, pp. 14-64.

Man has had need for communication ever since a tiger treed one of the first cavemen beyond earshot of his companions. Yet from the present day it is only one long life-time back to the days when man made the first real advances from the courier system, the messenger sent afoot, on horseback or by ship. Even mail was sent by stagecoach a hundred years ago, and it is only ninety-five years since the first hesitant telegraph line was opened between Washington and Baltimore. That telegraph did not displace the pony express—itsself a courier system—in the West until 1861. And Bell's telephone was only a curious gadget as recently as 1876. Practical radio is a child of the twentieth century, and broadcasting is less than twenty years old.

Yet today we live in a world where instantaneous communication is taken for granted, in a world of radio, transoceanic telephone service and phototransmission by which we can, and do, listen in on happenings half way around the world and see photographs of those happenings within the hour.

Our world has changed so rapidly that it sometimes seems we have scarcely been able to keep up with ourselves. Communication has altered our lives in ways undreamed when this republic was born. From a group of tidewater colonies we have

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grown into a close-knit nation that spans a continent. From an era when elections were held in November to give two months for the votes to be tallied and the results made known by stage-coach communication, we have reached a time when the election returns are known in every hamlet in the land a few hours after the polls close. We live in an age when political orators can address not only one but several nations at once, when a Pontiff's voice can reach all Christendom directly, when ships and airplanes need never be out of touch with land—when there is no more isolation anywhere.

Still more change is upon us, crowding swiftly. The knowledge gained from the development of each new service has helped in the development of all the others and each step ahead has led into new, uncharted fields of discovery. Just before us is a new era which brings television out of the laboratory and facsimile transmission into broader practical use.

Radio facsimile is a system of transmitting such graphic material as writing, printed matter and pictures and recording it in permanent form at some distant point. It has been in use for several years in the transmission of photographs from Europe and more recently to transmit weather maps from shore to ships. Now it is ready to move into still wider fields.

Television is a system of transmitting images of moving objects and scenes and reproducing them in transient form at some distant point. Ten years of laboratory and field experiments have solved major technical problems and justified the beginning of regular public television service this Spring, even though on a limited basis and over a limited area....

It is, of course, impossible to answer... [the] question ["What's next?"] with any degree of positiveness; yet it is possible to gain some idea of the direction we are headed through familiarity with the fields in which research engineers are now exploring the way.

The field of micro-waves is an instance. Radio transmission is based on sending impulses in waves through the atmosphere. Those waves may be governed as to length, which may vary from thousands of meters to a few centimeters. Engineers divide this vast spectrum of electromagnetic vibrations into categories of long waves, intermediate waves, short waves, ultra-short waves and micro waves. Long waves are employed in certain telegraph and telephone services, intermediate waves for sound broadcasting and other services, and short waves for long-distance telegraph and telephone transmissions including international broadcasting. The more recently conquered ultra-short waves are being harnessed to carry television images, and other new radio services are on the horizon. Micro waves are radio's frontier, and a subject of very active investigation by scientists....

Countless new uses may evolve. One may be the extension of telephone service to motorists traveling on the highway. The motorist, equipped with his own transmitter and receiver, could then call the telephone central by radio and get his connection without slackening speed. If we go a step further we may visualize motorists in separate cars talk-

ing to each other by radio. Another application may be the equipping of policemen with pocket-size radios which could keep them in constant two-way communication with their headquarters....

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Wheels, Keels and Wings, By Charles F. Kettering
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We sometimes hear it said that we are living in a world on wheels in an age that has solved the transportation problem. That is a pretty broad statement despite all the marvels of transportation which will be shown at the New York World's Fair. We have come quite a way since the time when a man's own feet were the only means he had to get him from where he was to where he wanted to be, and the transportation theme exhibit will dramatize that progress. We are beginning to learn, but there is a long road ahead for the wheels we are so proud of today.

Here in America we have seen some remarkable achievements. When George Washington was inaugurated the country's travel was by coach or wagon or by river boat. A man really in a hurry went on horseback. And that was only 150 years ago. It wasn't until just about a hundred years ago that we had the first steam railway train or that the first steamship crossed the Atlantic, and we didn't have a transcontinental railroad until after the Civil War. Men are still living who saw the pony express.

Within the span of a lifetime we have seen isolation banished. The railroad, the airplane, the automobile, the motor bus and the truck have given us an entirely new conception of distance.

I have seen those changes come about, and yet I was 21 before I saw a trolley car. But here is a strange thing about it: on the isolated farm in Ohio where I was born there is a tree in the front yard which, without moving an inch, has seen all the changes I have seen. Only now are they putting an improved road past that farm, but trains have roared past not far away, airplanes

one community, so far as communication can make it so, and in the same manner the whole world has become a group of neighboring communities. National crises and international disputes are no longer hidden behind a curtain of time and distance. Diplomacy has already changed. Will it change still more

have flown overhead and automobiles and trucks have traveled the country road. There have even been radio programs from across the Atlantic heard right there beside that tree, from a radio set in a car, and there have been motion pictures there in the yard, pictures taken in far places. The whole world, in a

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So there are big changes ahead for humanity. I am a great believer in a wonderful future. We're not very far

tomorrow? We already know what is happening and the whole world is close beside us at our beckoning. In the future we shall see as well as hear the world in action, have its features set down for us in black and white as well as listen to a description of them.

along the road of civilization yet; we're just bursting through the underbrush and starting down the road. Wait till we really get going. When we hit this spot the second time around we'll be doing things and getting somewhere.

Today we have an unusual condition because there is an excess of materials, an excess of money and an excess of manpower. All that means to me is that we haven't enough projects to work on. It means we are technologically behind, not technologically ahead. Not enough work to do, and there's so much yet to be done! We are just learning about steel. We are just learning about rubber. We are just learning about oil. Never was there such an opportunity to do things; but we can't go on doing only the same things we are doing now. We have got to open up a new field, and there are thousands of new fields waiting. It's up to us to find our way into them.

If we can only get some of these new projects under way we won't have enough materials or money or men to do the job. And we can start anywhere. There's no end to the opportunities.

But first we've got to get the idea through our heads that we don't know very much about anything and that the whole field of knowledge and achievement is ahead of us. That's why there's hope in the younger generation; they haven't learned yet that things can't be done. They aren't afraid of new ideas. I still think this is the age of the biggest opportunities for young men that ever existed. We are just beginning to learn.

