



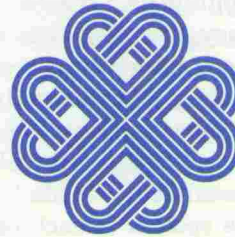
The Age of Communications

The continuing advance in communications technology has given mankind a powerful tool for the betterment of its condition. But the benefits of this boon are unevenly spread around the world. We have the means to build the 'global village.' Will it be a peaceful place, or divided against itself?

□ "What hath God wrought?" These words, clicking in dots and dashes over a primitive electromagnetic telegraph, opened the age of telecommunications. They were sent from Washington to Baltimore in 1843 by Samuel Morse, the inventor of the telegraph and the code that bears his name. They showed that even he saw something miraculous about what one contemporary newspaper called "writing with lightning." And even he could not conceive of the further technological miracles that would arise from his spadework over the next 140 years.

By the time Morse tapped that telegraph key, men had been writing for approximately 50 centuries. But their ability to transfer written language from one to another had always been tied to tangible objects, whether a tablet of stone or a piece of paper. They had been sending messages for untold centuries, too — by runner, horseman, fires, smoke, drums, flags, mirrors and carrier pigeon. Whatever the medium, they could only communicate remotely within the natural limits imposed by time and distance. Now, at a stroke, the tethers of time, space and matter had been slashed away.

This incredible technological coup had the effect of drawing people together. Before long, messages could surge instantly back and forth on electrical impulses between cities in Canada and the United States. By 1851, Great Britain was linked to France by a submarine cable. By 1866, two cables



were carrying words under the Atlantic Ocean between Britain and North America. In the meantime, telegraphic connections spread through Europe. Every time a new line was strung, the world shrank a little more.

It was a true revolution in human affairs — a revolution which even now is not over. Its significance was not lost on its pioneers; they realized that they were dealing with a force which would change the life of anyone within its reach. It was therefore a public concern, to be administered wisely. It was also an international concern, since its invisible traffic constantly criss-crossed national boundaries.

With this in mind, delegates of the nations of the European network, including Britain, met in Paris in 1865 to discuss how they could co-operate on regulations, procedures, rates, the use of equipment, and how they could expand the system. Out of that conference was born the world's first permanent intergovernmental organization, the International Telegraphic Union. This — together with the International Radiotelegraphic Union, founded in 1906 after wireless telegraphy had burst on the scene — was the forerunner of the International Telecommunications Union of today.

Now a United Nations body based in Geneva with 157 member states, the ITU is still pursuing its mission of improving the means of communication among nations. As explained in a UN document, "Its main responsibility is to standardize

international communications. It operates in a spirit of 'give and take,' with member countries exchanging information and data. This co-operation has enabled all the communications systems developed over the past century to be gradually extended to the public as a whole . . ."

The past century, of course, has seen the spread of the telephone, teleprinting, radio, telephoto, telemetry, television, microwave and communications satellites. The marriage of computer and communications technology now allows masses of data to be transmitted, decoded, classified and stored. Men have spoken to each other from earth to the moon. Pictures have been transmitted from other planets of the solar system. People in Halifax or Winnipeg are able to witness live sporting events from Melbourne or Manila. What hath God wrought now?

Because of the variety and complexity of the communications systems currently in use, the members and staff of the ITU obviously have a great deal more to think about than those fathers of intergovernmental co-operation in the 1860s. Yet they still have the same general purpose and the same general problem. This is to find orderly ways of spreading the benefits of telecommunications to more of mankind.

For — in terms of their ability to communicate with one another with the technical means at hand — the people of the world as a whole are not much better off now than they were at the turn of the century. As amazing as our present communications facilities are, access to them is still very much a matter of "have" and "have not."

Communications shape our lives in ways we never think about

A simple fact in a paper issued by the Canadian Department of Communications illustrates the point: Of the 550 million telephones in service today, three-quarters are confined to only eight of the world's 170-odd countries. The great bulk of the world's people must live out their lives without what we Canadians regard as an indispensable communications device.

To appreciate what a handicap this is, imagine not being able to "pick up the phone" to make

appointments and reservations, or to call a repairman or an ambulance. Then consider how many businesses are wholly or partially dependent on the telephone. Where would our society and economy be without an efficient and near-universal telephone system? Deprived of this single communications tool, we might remain an underdeveloped nation yet.

Modern communications shape our lives in other ways that we rarely think about. Take, for instance, a morning radio broadcast in a Canadian city of the sort we might listen to before setting out to work. From a weather satellite sending signals to earth, it relays the word that a storm is expected. A two-way hook-up with a helicopter or mobile traffic spotters lets us know that a certain street is jammed, and that it would be better to drive another way. The station's film critic recommends a new movie, and we decide to go to see it that evening. The information carried over the radio has influenced our movements before we ever leave our doors.

In contrast, many people in the Third World cannot be warned that a hurricane is on its way because there is no way of collecting and transmitting the information. Boats are lost at sea for want of telemetric navigational aids. There is no guidance to be had from radio or television in large parts of the world, because there are no broadcasting facilities — or if they exist, they send out too-limited signals. Some places do not even have a reliable power supply on which up-to-date communications facilities could be based.

The fact that the communications revolution has bypassed most of the human race is the reason that 1983 has been designated World Communications Year by the United Nations. Co-ordinated by the ITU, the Year is a concentrated campaign aimed at three fundamental objectives: "To increase the scope and effectiveness of communications as a force for economic, cultural and social development; to stress the expansion and refinement of communications infrastructures,

particularly in developing countries; and to promote the development of a complete world-wide communications network, so that no one will be isolated from the local, national and international community."

In its resolution proclaiming the Year, the General Assembly stressed "the fundamental importance of communications infrastructures as an essential element in the economic and social development of all countries." The effort had to start somewhere, so it started where the need is greatest. It should be noted, however, that the Oxford English Dictionary defines infrastructure as the "subordinate parts of an undertaking." Behind all the pilot projects, symposia and studies being done by the national committees this year lies a long-term undertaking which will have a profound influence on the future of the world.

The UN Year is only a start to efforts in years to come

How seriously the "have" nations take the initial commitment they have made during the UN Year is a question of historic consequence. For the real work will begin once the conferences have been adjourned and the studies made. Just what is at stake in the follow-through was outlined by the ITU in the preamble to its guide to the Year's activities. It pointed out that mankind is now engaged in four great struggles: the struggle for peace, and the struggles against hunger, underdevelopment and ignorance. It suggested that communications has a front-line role to perform in all of these.

As it happens, Canada is in the front line of the nations that are capable of making a contribution. Our economic, social and cultural development has been spurred by telecommunications ever since the days of Samuel Morse. Our variable climate, vast distances and rugged terrain have presented challenges to our communications scientists and engineers which have been overcome to the potential benefit of countries facing similar problems.

Canada's national committee for the Year has been doing a good job of laying the groundwork for future efforts. Composed of government agencies, corporations and universities, and coordinated by the Federal Department of Communications, the committee has held international conferences on such key subjects as the development of infrastructures, community broadcasting, the impact of information technology, and the use of communications satellites. In the past few years, Canada has climbed to pre-eminence in the latter field.

Does charity begin at home at a time of unemployment?

As a paper from the national committee said, "thanks to telecommunications satellites, all Canadians, wherever they live, have access to services undreamed of only a few years ago. Telemedicine, tele-education, Telidon, radio and television broadcasts in many languages, search and rescue by satellite, satellite mapping — these are only a few of the applications already in use or soon to be introduced. All these achievements make Canada a leader in communications technology and applications and place a moral obligation on us to offer our expertise to other countries."

At a time of high unemployment and other domestic economic ills, some Canadians might question whether that "moral obligation" exists, arguing that charity begins at home and that the government has no business spending time and money assisting people outside of the country. This is a short-sighted view, particularly in the case of telecommunications, where there is a strong possibility of an eventual pay-back in Canadian jobs.

In launching Canada's participation in the Year, Communications Minister Francis Fox observed that "we have the technology and resources to play a leading role in trying to meet the objectives of World Communications Year — and at the same time improve our international competitive position." Many of the specialties which the Canadian industry has pursued are suited to the needs of less-developed countries. These include digital switching (which allows for small, easy-to-

use switchboards), fibre optic transmission in rural settings, and single-channel satellite telephony.

Canadians have also amassed a rich store of expertise in broadcasting. Besides building up a skilled and sophisticated broadcast industry, we have discovered techniques to bring radio and television services to the most remote areas of our immense land.

It may be questioned, however, if our "moral obligation" to share our knowledge extends into this activity. The same reservation applies here as to other forms of external aid — that it may fall into the wrong hands. Like all great technological developments, broadcasting can be twisted to serve evil purposes — to fan the fires of hatred, to perpetuate oppression, or both.

Already, a large portion of global broadcasting capacity is given over to state propaganda. Oppressive and anti-democratic regimes are especially prone to use the airwaves to bend their subjects' minds.

For propaganda to be effective, people must be kept in the dark

The danger that some governments or future governments might misapply Canadian technology in the broadcast field must be balanced against the good it stands to do in spreading useful information and education. Properly applied, broadcasting can do a great deal to combat ignorance, especially in places where illiteracy is the rule.

It should be recalled, too, that one of the aims of the UN Year is to help end the isolation of the technologically-deprived from the "international community." As people gain greater contact with the rest of the world, they presumably will become less susceptible to propaganda. A prophetic expert on the subject, Adolph Hilter, wrote in *Mein Kampf* that propaganda, to be effective, must operate on the level of the "most stupid" members of society. Hitler, who loathed universal education, knew that ignorance goes hand-in-hand with gullibility. He realized that he could best "work his wicked will,"

as Winston Churchill put it, when his audience was kept in the dark.

Modern communications systems have the power to bring light to the dark corners of this world, and thus bring a brighter life to those who do not now share in their blessings. By improving distribution and cutting down on waste, they can help to see that people have enough to eat. With their ability to transmit computerized images and data, they are coming into increasing use in medicine for long-distance diagnosis, treatment and surgery. "Telemedicine," largely developed in Canada, is ideally suited to conditions in the Third World.

Using communications to spur the cause of understanding

As Canadians have every reason to know, communications are a spearhead of economic progress. If the economic imbalance which has caused so much grief in the world is to be redressed, adequate communications must come first.

Finally, there is the fundamental question which should engage us all: whether the human race is to be allowed to live in peace, or whether we are to continue to tear ourselves apart in outbreaks of war which may ultimately lead to our extinction. Though our power to communicate is frequently abused, it can nonetheless be mobilized in the cause of promoting understanding across borders, oceans, and the psychological barriers of differing religions and ideologies.

It was a Canadian, Marshall McLuhan, who declared that the electronic media had transformed the earth into a "global village." McLuhan was a visionary, and perhaps his pronouncement was premature. But when and if the global village is ever formed, it is the duty of those with the tools at their command to use them to their best advantage. The object must be to make it a peaceful and prosperous place, not one divided against itself.