

vital in

The SP-1 for telephone company exchanges and the SG-1 both handled telephone traffic in the form of analog signals, the traditional format for voice communication. If practical and economic equipment for the transmission and switching of digital signals could be developed, all forms of information and communications - including voice and other audio signals, text, graphic, visual images, and computerized data - could be handled in a common format. Essentially all information and communication equipment could be designed to speak the same language of digital bits, and to process and communicate information in any form. The global telephone system could be transformed into a telecommunications system.

In December, 1975, Northern Telecom announced the world's first fully digital PABX, offering simultaneous voice and data switching to meet the needs of business firms and such other organizations as hospitals, universities, police and fire departments, government agencies, and military forces. The new PABX was called SL-1, and it was to be manufactured in Belleville.

In 1976, Northern Telecom announced the world's first digital exchanges for telephone companies, its DMS line of central office switches. The DMS switches and the SL family of private branch exchanges made Northern Telecom the world's first supplier of a full range of digital telecommunications equipment and systems.

To date, Northern Telecom has invested more than \$1 billion in research and development to expand and enhance its telecommunication equipment, and is investing close to \$300 million a year in continuing R and D work. A lot of this stems from the establishment of the electronics division in Belleville 35 years ago, and the R and D lab

that shared premises with a Belleville optical company. It was the precursor of Bell-Northern Research, Canada's largest industrial research organization (owned 70-30 by Northern Telecom Limited and Bell Canada), as well as Northern Telecom's own R and D facilities at more than a score of its manufacturing plants. R and D continues to be an important function at Belleville, where some 250 people are engaged in the design and development of new products.

It hasn't exactly all happened in Belleville, but it would be difficult to find another community of this size that has made a greater contribution to the evolution of today's high technology products that power the emerging information age.

Since the introduction of the SL-1 in 1975, the range of digital PABXs manufactured at Belleville has been expanded. The latest in this line is the SL-1S, and designed to handle from 30 to 120 lines. The SL family of private branch exchanges thus now cover a range from 30 to 100,000 lines. (The digital switches for telephone company exchanges can handle up to 300,000 lines).

Another digital switch made at Belleville, the SL-10, is one of the most advanced package switches, which communicate data in blocks or "packets" thus eliminating the need for separate lines dedicated to each user.

Yesterday, the global telephone network plugged in half a billion telephones. Today, the telecommunications network has added to this millions of business machines: com-

puters, word processors, automatic bank teller machines, teletype machines, Displayphones, and others. Tomorrow, millions of home units are likely to be added: personal computers, two-way inter-active teletex systems such as Teledon, television, and even stereo FM radio broadcasts. The convergence of computers, telecommunications, and television has been widely perceived as leading to a social and economic revolution more sweeping than anything else since the industrial revolution.

In Belleville, Northern Telecom has meant the largest single source of employment; immunity from the 1981-82 recession; the economic prize sought by nearly every city in North America, a high technology industry; and the stimulating challenge of change.

Belleville traces its history back nearly two centuries, to the Unite Empire Loyalists who fled to the Bay of Quinte on Lake Ontario from the former colony of New York after the American revolution, to retain their strong allegiance to the British Crown.