

telecommunications technology.²⁰ This implies that equipment markets will be less balkanized, more competitive and capable of supporting longer production runs at lower unit costs than they have in the past.

Second, by assuring the widespread use of a digital technology that allows the transmission of voice, data and image over the same line, the EC is opening up a myriad of niches for firms with innovative ideas on how to provide new services to telephone users. For example, ISDN facilitates the development of electronic banking, shopping and education. As a result, ISDN will create a plethora of new business opportunities for small firms who do not have the hundreds of millions of dollars of up-front funding required to develop a new switch. One Canadian firm which has already begun to use its expertise to develop networks that can take advantage of ISDN is Newbridge Networks.²¹ There is little doubt that numerous other Canadian firms have the technological expertise and know-how to fill the niches that ISDN will create.

In meeting the challenge of Europe 1992, Canadian firms will have to take advantage of both scientific expertise and "time and place specific" knowledge. For most firms, success will reside in finding and filling appropriate niches. At the *industry* level little *structural* reorganization is anticipated. At the *firm* level reorganization may be very important. To find one's spot, it may be desirable, and in many cases, necessary to contemplate joint ventures, consortia and other means of spreading risks as well as responsibilities. These should be viewed as contractual aids to Canadian firms wishing to compete in a small but global way.

For many small, individually oriented high-tech firms such reorganizations may not be welcomed. In some cases inter-firm attachments may even be successfully

avoided. But in most cases firms wishing to make sales abroad will have to become directly involved abroad too. When "abroad" means something more "foreign" than the U.S., it may well be wiser to join with others more familiar with the local scene. Doing so successfully may turn out to be one of the most important challenges faced by small- and medium-sized Canadian telecommunications and computer firms.

Europe 1992 is another test of Canada's capability and willingness to compete internationally. But unlike the Canada-U.S. Free Trade Agreement, which concentrated on trade issues, Europe 1992 is as much about investment or some other form of "presence" as it is trade -- at least for high-tech industries. An investment-starved, employment-lagging Europe, which spent much of the 1980s exporting capital to a savings-deficient U.S., will use Europe 1992 to attract capital as well as stimulate domestic investment in industries of the future. Telecommunications and computer-related industries are a major part of the EC future. How large a part will be played by Canadian firms depends not only on having high-quality products to sell (which Canada does) but a willingness to have a "presence" in Europe.