



COMEXPORT

LATEST ISSUE
DERNIER
NUMERO

Vol. 1, No. 3

DEC 1 1993

December 1, 1993

CITEL – Inter-American Telecommunication Commission

Canadian membership in international telecommunications organizations provides a window on the world of telecommunications operators. With the links established through these organizations, the Canadian government can learn of upcoming opportunities and make sure that concerns of Canadian companies are well represented. This issue of *ComExport* looks at CITEL while future issues will discuss Canadian involvement in organizations such as the International Telecommunication Union (ITU) and INTELSAT.

In June 1993, the General Assembly of the Organization of American States (OAS) in Managua, Nicaragua established CITEL (Comision Interamericana de Telecomunicaciones, or Inter-American Telecommunication Commission), as part of the OAS structure. While CITEL existed as a "Specialized Conference" under previous arrangements within the OAS, the 35 member states of CITEL from North, Central and South America as well as the Caribbean expect that the new Commission, with its enhanced

status and level of funding, will better represent the interests of the CITEL member states in the important fields of radiocommunications, standardization and telecommunication development. It is anticipated that CITEL will be able to generate common proposals and positions for the countries of the Americas region in preparation for ITU conferences, thus enhancing the prospect of achieving results that benefit the CITEL member states as a whole. It is also expected that CITEL will take a larger role in co-ordinating ITU- and OAS-sponsored development projects.

Canadian membership in CITEL gives our representatives an insider's view of the liberalization and privatization trends that are sweeping the Latin American telecommunications sector. Colombia's requirements for help in spectrum management, for example, were discovered during a presentation of Canadian capabilities in the field to CITEL members. This has led to negotiations between Colombia and a Canadian spectrum management technology company.

Opportunities exist for greater involvement by private sector in CITEL's activities through seminars and through participation in standards co-ordination and co-operation work. Recent seminar topics have included personal communications services, mobile communications satellites and broadcast satellites. CITEL reports can be obtained from the International Telecommunications Division of Industry Canada (see contacts box). Increased private sector involvement should lead to the creation of a special category of "membership" in CITEL, which would reflect an enhanced appeal to a wider constituency of participants.

Industry Canada – New Ministry, New Mandate

The federal role in helping to build a modern competitive economy has now been focussed in the new industry portfolio, which combines, among other roles, the telecommunications policy and programs from the former Department of Communications (DOC) with the responsibilities to promote international competitiveness and economic development from Industry, Science and Technology Canada (ISTC). The International Telecommunications Division, which moves from DOC to the new Department of Industry, will maintain its close relationships with ministries of communications in other countries, through consultations and bilateral agreements. These relationships have enabled the division to introduce Canadian companies, equipment and services to foreign telecom decision makers

and to access strategic market information that is passed on to Canadian companies through reports and through issues of *ComExport*.

The new structure will lead to closer co-ordination between the International Telecommunications Division and the divisions of the former ISTC that are responsible for helping industry. The current close relationship with the Trade Commissioner Service of Foreign Affairs and International Trade Canada will continue. Indeed, the article on the U.K. cable industry in this issue of *ComExport* was contributed by the Canadian High Commission in London.

Feel free to call the International Telecommunications Division with any question you may have on telecommunications in foreign markets (see contacts box).



Ministry Sets Development Objectives:

Telecommunications in Hungary

With only 10 telephones per 100 people, Hungary is keen to introduce telecommunications competition. The Hungarians, however, want to avoid the practice of "cream-skimming", where large foreign companies enter a market only to offer services to the more profitable business sector. Consequently, the Ministry for Transport, Communication and Water Management has built development objectives and quality-of-service targets into new licences. Even the national operator, the Hungarian Telecommunications Company (HTC), will not be exempt. The following are the Ministry's 1995 telecom development targets:

- Make basic telecom services more accessible to business—new business subscribers in Budapest must be able to get services within six months; businesses outside the capital within one year.
- Increase rural communications—all villages must have a public pay telephone that can receive calls and is connected to the international network by 1996.
- Modernize public networks—all public networks must be automated and all subscribers must have access to international and trunk services.
- Improve service to meet demand—by 1997, all existing demand for basic service must be met and 95 percent of new applications must be filled within six months. The average wait for service now stands at 12 years for service. After the year 2000, no subscriber will have to wait more than three months.

In order to achieve its goal of improving the quality of service throughout the country, the Ministry needs to maximize foreign capital investments in Hungary. The gov-

ernment has thus chosen to fragment the telecom market to attract as much new investment as possible from many sources, with a goal of US\$5-7 billion in capital investment projects by the year 2000.

New Telecommunications Law

Hungary will liberalize terminal equipment markets and open sectors such as cellular, paging and value-added networks (VANs) to limited competition, and data transmission will be fully competitive subject to licensing. The country's monopoly operator, the HTC, will be privatized by the end of 1993, with a limit of 30 percent foreign ownership. These changes will make way for three types of local service providers. The first includes HTC and its privatization partner, which will serve the majority of the 55 primary districts in Hungary, including Budapest. The second and third types involve 20 of Hungary's prime districts, which will be served by rural service providers with some HTC participation and independent service providers with no HTC participation. Minimum percentage of Hungarian ownership in the local telecom network will probably be set at 25 percent.

The Future

While Canadian telecommunications activities have been slow in gaining a foothold in Hungary, the future looks promising. During recent meetings, Hungarian authorities have expressed a great deal of interest in the features of Canadian cordless two-way telephony, CT2 Plus. CT2 technology's potential for rapid inexpensive deployment of telephone service in rural areas is particularly attractive.

Co-operation with Russian MPT

Following the signature of two Memoranda of Understanding (MOU) with the Ministry of Posts and Telecommunications (MPT) of the Russian Federation, last February (*ComExport* Vol. 1, No. 1), the Department of Communications (DOC) held its first bilateral meeting with the Russian MPT this June, in Moscow. The talks were successful in establishing a permanent working group that will plan and co-ordinate joint projects to promote Canadian telecommunications experience and expertise in Russia. The group will also be used to address various financing, regulatory and legal issues, as well as common problems experienced by Canadian telecom companies wanting to do business in Russia. Preparations for the first meeting of the permanent working group will begin this fall with a first round of Canadian government-industry consultations aimed at developing a co-ordinated "Canada Inc." approach to the Russian telecommunications market. Companies interested in further information should contact the International Telecommunications Division (see contacts box) at Industry Canada.

Making Contacts through R&D Alliances

One of the most potent ways of gaining exposure in foreign markets is to establish research and development alliances with local firms and laboratories. The International Trade Policy and Technology Co-operation Division of the Department of Industry has the experience to help Canadian firms find the right contacts and events that lead to successful partnerships. Here is how it happens.

R&D in Canada and final packaging on foreign soil are often closely linked. Applications development merges with manufacturing when a Canadian firm licenses another firm or makes a deal to be an original equipment manufacturer supplier to a foreign manufacturing plant. As well, Canadian alliances with foreign firms and governments during mega-projects helps facilitate the entry of Canadian products.

Technical missions between countries often form the basis for future R&D agreements. There have been numerous success stories that have their origins in such technical missions and contacts. These missions are initiated for the purpose of technical transfers or R&D

information exchanges, not immediate sales. However, in 1991 and 1992, Department of Communications-sponsored technical missions on distance education, training and courseware led to both R&D alliances and to immediate sales in Europe and in Latin America. Technical missions and seminars between Canadian and Japanese firms have also generated their share of R&D projects.

The success stories vary depending on the nature of the R&D alliance. One case involved the development of a few simple interface devices to overcome standards differences, thus making a Canadian product fully functional in European conditions. Another example consisted of writing source codes in order to adapt a Canadian communications conferencing system so that it would function on European telecommunications networks. A further success story involved OEM alliances with German and Finnish firms who embedded a Canadian device into their products. In yet another illustration, a Canadian computer-based training program for electronics and other subjects taught in technical schools has been so successfully adapted to foreign local conditions that it has become a standard part of the curriculum in many countries in Europe, as well as in the U.S.

Cable TV in the U.K.

At the Forefront of New Telephony Services

In the United Kingdom, cable TV dates back some 40 years to the days of narrowband relay systems and was very much a second-class citizen, compared to terrestrial television. By the late 70s, cable TV had declined rapidly as off-air terrestrial TV reception had improved markedly and offered almost blanket coverage of the whole U.K.

In 1983, the government decided to license a tranche of up to 12 new broadband cable TV franchises, which were also able to offer telephony services to their subscribers, under certain conditions. That same year, the government outlined its new competitive telecommunications policy, known as the "Duopoly Policy". This policy gave British Telecom (BT) and Mercury an exclusive licence to offer telephony services within the U.K. for a period

of seven years. New cable TV operators could only offer telephony services in partnership with either of these two companies.

The next major watershed was reached in 1991, when the promised review of the existing telecommunications "Duopoly" was undertaken and resulted in much more favourable terms for the fledgling cable telephony operators; the government allowed telephony services to be offered free of any ties to BT or Mercury.

Today

Investment in U.K. cable TV is now running at around \$500-\$700 million per year (C\$1-1.4 billion) according to the Cable TV Association. Much of the investment is fuelled by U.S. "Baby Bells", such as Nynex and US West and Canadian

companies such as Vidéotron and BCE, and is being directed at telephony infrastructure with, it is estimated, around 150,000 cable TV telephony lines installed by the end of March 1993. Industry sources suggest that BT is losing around 15,000 lines per month to cable telephony companies who offer low prices and advanced services, some of which BT is not yet offering. Cable companies typically undercut BT by 10-20 percent on call charges with other incentives including very low connection charges, monthly bills (BT only offers quarterly bills) and billing by the second rather than the unit (in the U.K. even local calls are billed by duration).

Cable companies have so far relied on Mercury (now 20 percent owned by Bell Canada Enterprises) to carry their long-distance calls. However, BT is now keen to enter this market, reasoning that part of

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Cable TV

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the cake is better than no cake at all. Other long-distance operators may also enter the U.K. market: both US Sprint and ATT have filed applications. So far, the U.S. companies have been denied licences, pending negotiations with the FCC over BT's access rights in the American market. Cable companies are also looking towards local loop competition. Earlier this year a new licence was granted to Ionica, a U.K. company planning to offer radio-based telephony services throughout the U.K. A number of other organizations, including the newly privatized U.K. electricity and water utilities, are also

planning their own telephony networks, either independently or in partnership with others.

All this activity has created opportunities for Canadian telecommunications companies to sell their advanced equipment and services to these new operators. Some, such as Northern Telecom, have already seized a significant share of the potential market and are well positioned for future orders. Others may not be aware of the opportunities or may be uncertain on how to best capitalize on them. If you would like advice or further information on the U.K. telecommunications market, please contact the Canadian High Commission in London (see contacts box).

The Pocket Phone of the Future is Here:

Canada Helps Other Countries Introduce New Service

The forecasted explosion in personal communications like pocket telephones will have a significant impact in developing and newly industrializing countries. Wireless local loops may become a reality in these countries before being implemented in the industrialized world. The Department of Industry, through the Canada/Mexico Memorandum of Understanding in Telecommunications, is actively working with the Secretaria de Comunicaciones y Transportes (SCT) to assist with the introduction of digital cordless telephony/personal communications in Mexico. The department recently hosted a Mexican delegation that was exploring Canadian strategies and approaches to personal communications.

Canada has taken a world leading role by licensing four operators of wireless personal two-way telephone systems service providers. Mexico considers Canada a model country. Officials from the

SCT are working closely with the Spectrum, Telecommunications and Information Technologies Sector at Industry Canada. A seminar on personal communications is being organized in Mexico from January 10 to 17, 1994, which will bring together Canadian licensed operators, equipment vendors, as well as potential future operators, and joint-venture partners from Mexico. Interested companies should contact the International Telecommunications Division of Industry Canada (see contacts box).



Contacts

ComExport is published in English and French, as a supplement to *CanadExport*, by the International Telecommunications Division of Industry Canada. Articles may be reprinted with credit to *ComExport*.

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Southeast Asia and the Cellular Telephone

In key developing countries such as the Philippines, Indonesia, Malaysia and Thailand, cellular telephone usage is increasing at phenomenal rates. Conventional networks have been slow and expensive to develop and have not been able to service the pent-up requirements for basic and other value-added services. Recent liberalization within these countries has changed the focus of service offerings with a variety of new approaches being employed, including the development of more cellular systems and more companies offering these services. In the drive for universal coverage, cellular has a technical advantage as wider coverage can be provided at lower cost than with conventional telephone service. The current low telephone phone densities should favour the market development of advanced services like voice messaging and roaming.

The Philippines

The Philippine government is working towards an open and competitive environment for mobile communications services. The industry, like other public utilities, is highly regulated by the government through: the House of Representatives, which formulates laws pertaining to the granting of franchises for telecom service operation; the Department of Transportation and Communication (DOTC), which serves as the policy making body for the industry; and the National Telecommunications Commission (NTC), which serves as the industry regulator.

Recent policy changes by the NTC are opening the field of mobile communications, leading to an increase in the number of cellular-based service applications. These new cellular services will help satisfy the demand for telephones in

a country where wire-based services are available in only 20 percent of the nation's municipalities.

A digital cellular network has been proposed by Universal Telecommunications Services Inc., which will complement the existing nationwide systems operated by Pilipino Telephone Corp. (Piltel), Express Telecommunications Corp. (Extelcom), ISLA and Asialink.

Indonesia

The cellular services market in Indonesia is small, about 50,000 subscribers, but growing rapidly. There are three cellular systems in operation. An AMPS network with 32,000 subscribers is owned by three companies, PT Elektrindo Nusantara, PC Centralindo Panca Sakti and PT Telekomindo. PT Telekom owns an NMT 450 network with 21,000 subscribers, and PT Inti owns a TACs network with about 4,000 users.

All cellular mobile networks in Indonesia are constructed by private companies under various forms of revenue-sharing arrangements with PT Telekom. As in Thailand, the types of agreements include: Build and Transfer, which is normally used for turnkey projects; Build, Own, and Operate, still uncommon but gaining ground with the influx of private investors; Build, Operate, and Transfer, under which the private company operates the network it has built for a concessionary period negotiated with PT Telekom before handing infrastructure over to Telekom; and Build, Transfer, and Operate, under which the newly built infrastructure is handed over to Telekom, but the private company continues to operate it. Build, Operate, and Transfer is currently the Indonesian government's revenue scheme of choice.

PT Indosat, responsible for international traffic, is planning to

offer cellular services across Indonesia in the near future and is soliciting international partners to invest in and assist with the operation of a new digital service. The company is also currently involved in negotiations with Bank Dagang Negara and PT Telekom to launch a new mobile system. Both PT Telekom and PT Indosat are planning mobile subsidiaries, indicating that the fixed network is still far from developed and confirming the increased importance of cellular communications.

Thailand

Thailand, with a population of about 60 million, has an estimated \$100 million cellular telephone industry with about 190,000 subscribers. On a competitive level, cellular is quite advanced in Thailand with four cellular providers. As in Indonesia, Thailand's two state-owned enterprises, the Telecommunications Authority of Thailand (TOT) and the Communications Authority of Thailand (CAT) which oversees domestic and international telecommunications respectively, recently commissioned new cellular networks under Build, Operate, and Transfer arrangements (BOT) with Advanced Information Services and Total Access Communications. TOT operates an NMT 450/470 system and CAT offers an AMPS 800 system. In Bangkok, operating under BTOs with TOT, Advanced Information Services provides the NMT 900 digital cellular network and Total Access Communications provides an AMPS 800 digital cellular service. This network offers international roaming service to Hong Kong and Singapore.

Substantial growth of mobile applications is expected in Thailand. The development of the terrestrial network remains slow, particularly in rural areas, and the quality of the fixed network is poor. TOT expects to introduce a GSM service in the next year. As there are already four

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Southeast Asia

Telecommunications in Rural China

The explosive telecom growth in China (reported in the first issue *ComExport*) is decidedly uneven. While China, on average, has 1.63 telephones per 100 people, cities such as Beijing, Shanghai and Guangzhou have 18, 14, and 15 per 100 respectively. The 800 million people who live in China's rural areas have only 0.1 or 0.2 telephones per 100 people—a huge untapped market. Development in the rural areas is closely linked to the availability of funds, which in turn depends on the development of local industry or tourism.

Foreign Affairs and International Trade Canada and the Department of Communications (now the Department of Industry), organized a mission, led by Michael Binder, now Assistant Deputy Minister for Spectrum, Information Technologies and Telecommunications at Industry, to introduce Canadian companies to the rural Chinese market and to demonstrate Canadian technology to the Chinese. The mission was launched in Beijing on May 21, by the Minister of Communications, and visited Kunming in Yunnan province, and Nanning and Guilin in the Autonomous Region of Guangxi, in addition to a number of smaller locations in those regions.

Telecommunications in rural China grows out from the cities and county seats. Areas distant from these centres may lack telephone service—for example, 48 percent of village government headquarters in

Guangxi do not have telephone service. The current goal is to extend networks and to increase capacity rather than finding ways to reach every community. Providing access to communities distant from current telephone service through more expensive means, such as satellite communications, appears unlikely.

Some communities will gain access to the telephone network only when cellular service is extended close to their area. Cellular systems are now being commissioned in cities with one large cell covering the city and surrounding countryside. The initial cost to the subscriber is very high. Nevertheless, the systems are oversubscribed as soon as they are set up. Post and Telecom Authorities (PTA) are scrambling to add cells, channels and acquire cellular sets. If they have a 900 MHz TACS system and there is spectrum available in the 800 Mhz range, they will consider adding an AMPS network, particularly for private networks. Availability of equipment and speed of installation is important. In Nanning, for example, 1000 people have paid a large deposit to be on the waiting list for cellular service. Officials would likely consider purchasing from other suppliers if quick delivery and installation could be guaranteed.

There is a desperate need for "bypass solutions" for premium customers (such as hotels and western joint ventures) in areas where the local telephone system is over-loaded. For example, in Nanning, only one call in 30 to Guangzhou or Hong Kong gets through during peak hours due to high trunk traffic.

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Southeast Asia

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cellular services in Bangkok and with Telecom Asia and possibly others in the near future working to improve the fixed telephone network, mobile revenue growth rates in Bangkok may be lower than in the past, but rural markets are still open to development. Cellular, along with paging and satellite-based services, is fully liberalized in Thailand.

Malaysia

Cellular telephone service in Malaysia is provided by Telekom Malaysia, which operates an NMT 450 system, and Celcom (a private company owned by Alpine Sdn Bhd and Time Engineering and Tech-

nology Resources), which operates a TACS 900 system. The present overall telephone penetration is 12 per 100 people and this is expected to increase to 25 per 100 by the year 1997.

Telekom Malaysia, privatized in 1990, is the country's dominant telecom operator, providing all telecom services. The present mobile network has six exchanges with a total of 120,000 mobile exchange lines. Capacity is expected to increase to 150,000 lines by 1995.

To date, the Malaysian government has allowed competition in customer premises equipment, paging, payphone and mobile services. Competition may be introduced for domestic trunk international services as well. Telekom Malaysia's

decision to set up a joint venture to develop a digital cellular mobile subsidiary reflects the strong growth potential of cellular.

The developing countries are about to experience extensive growth in the cellular area. It is expected that Indonesia, currently possessing the fifth largest cellular market in the region, will surpass Malaysia, Singapore, Thailand and the Philippines over the next few years. In fact, the least developed countries will for many reasons turn out to have the most potential in cellular markets. As a result, the cellular industry in all of these countries may actually surpass, in relative size, the cellular markets of more developed countries like Singapore within the next five years.

Rural China

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Equipment sold for the Chinese market must be designed with rapid demand growth in mind. As the penetration rates jump from one telephone to 10 telephones per 100 people during this decade, equipment supplied to a telecom authority that supports two or three times current capacity will be overloaded in two or three years. Therefore higher capacity equipment should be installed at the outset.

In the provinces visited by the mission, there was, as yet, little demand from local industries for data communications such as 56kb switched or private lines. China's packet switching network, using Northern Telecom equipment, has just been commissioned to link all the provincial capitals. Several provinces have established

packet switching networks at the municipal level, while other provinces are planning to do the same in the near future.

Chinese telecom equipment manufacturers in the areas visited do not appear to be interested in the latest in technology, but rather in products that have been proven in other markets. What is of particular interest is semi-knock-down (SKD) kits that they can assemble without the need for highly skilled technicians. Joint ventures based on China's assembly of SKDs have been set up for cellular systems, switching equipment, optical fibre, digital microwave, VSATs, radar, paging, generators and air conditioners.

Further information, including a detailed report on the mission, is available from the International Telecommunications Division at Industry Canada (see contacts box).

Telecom Market Opportunities in Saudi Arabia

In 1992, the Saudi Ministry of Posts, Telegraph and Telephones (PTT) announced its intention to proceed with the first phase of a planned one million-plus telephone line expansion project (TEP-6), valued at US\$2-3 billion, doubling the capacity of the Kingdom's existing telephone system. Saudi Arabia is now one of the world's largest markets for telecommunications equipment and expertise.

By the time the fifth five-year plan came into effect in 1990, the Kingdom's telecommunications network included 1.5 million telephone lines serving 350 cities and villages, 30,000 telex lines serving these same communities and 20,000 mobile telephones in use in 30 cities. Overall investment in the sector during the current Saudi five-year plan has been projected at US\$6.5 billion, with the telecom market estimated at \$1.5 billion this year. Growth in network infrastructure is expected to remain at 25 percent for the foreseeable future.

TEP-6 also includes the following elements:

- switching, transmission equipment, outside plant facilities;
- expanding the subscriber radio system;
- expanding the (long distance) fibre optic network;
- upgrading the microwave network from analog to digital;
- expanding/upgrading satellite earth station facilities.

Despite this major expansion project, the upgraded system will meet only about 30-40 percent of the overall demand requirements of the Kingdom's 17 million inhabitants. The rapid line-capacity expansion will need to be continued after the completion of TEP-6 and there is a wide range of other complementary opportunities of interest to Canadian telecommunications firms:

- Packet switching—there is a requirement to update and expand the X.25 packet switched network.
- PBX—the Saudi PBX market will require 200,000 lines per year.
- Mobile telephones—there is an increasing demand for mobile telephones. A tender for 100,000-plus new lines has recently been issued.

• Pagers—there is strong demand for pagers and paging equipment. Glenayre is a major player in the Saudi pager market.

• Spectrum management—the issue of assigning frequencies for civilian and military use is now under review.

• Air traffic control—navigational aides at air force facilities were installed in the mid-1970s and are now considered to be in need of updating. Five Saudi air bases will require air traffic control upgrading.

• Operations and maintenance—the contract currently managed by Australian Telecom expires in September 1994, and the PTT is expected to call for bids within four to six months.

• Other opportunities—market opportunities exist in network digitalization, network planning/management, coaxial cable and fibre optics, encryption, and security-related telecommunications areas.

Over the period 1991-1992, Canadian firms exported to Saudi Arabia an average of about \$12 million per year worth of telecommunications equipment, our fifth largest export to the Kingdom. Corresponding annual exports from

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Canadian and Korean Governments Talk Telecom

Mobile telephony, standards, trade concerns, multilateral issues, collaborative research efforts and technology transfer were on the agenda in Seoul this September, at the first Canada-Korea Telecommunications Policy Consultations, between the Korean Ministry of Communications (MOC) and Industry Canada. The two-day talks, co-chaired by Michael Binder (Assistant Deputy Minister of Spectrum, Information Technology and Telecommunications) and his Korean counterpart, Assistant Minister Park Sung-Deuk, gave the Koreans a chance to explain their type approval process, a procedure that has proved unwieldy for some Canadian companies. Canada raised the possibility of reaching a bilateral accord on type approval that would see the ratification of testing on a reciprocal basis. The two sides agreed to work towards an agreement for next year. Canada will follow up on its proposed co-operation on OSI (open system integration) testing.

Mobile Telephony

During the talks, the MOC discussed its major CDMA-based (Code Division Multiplexing Access) mobile communications development program, launched

through its research arm, the Electronics and Telecommunications Research Institute (ETRI, see sidebar). Initiated by a \$17 million American technology transfer, the Korean government developed the program to satisfy domestic demand with internationally competitive equipment designed and manufactured in Korea.

ETRI is planning for the commercial release of CDMA equipment by the fall of 1994, with Hyundai, Goldstar and Samsung developing the handsets and infrastructure. The MOC has determined that CDMA will be adopted by Korea's current cellular operator, Korea Mobile Telephone Company (KMT) and by a new cellular operator to be selected in 1994.

It has been stipulated that the second cellular operator must be 66 percent Korean owned and that any new network should cover the entire country. The current provider, KMT, is excluded from financial participation in the second system.

For further information on the Korean telecommunications market or a summary report of the Canada-Korea telecommunications consultations, please contact the International Telecommunications Division at Industry Canada (see contacts box).

Saudi Arabia

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the United States amounted to some \$300 million—clearly Canada has the potential to increase sales, particularly since we enjoy an outstanding reputation in Saudi Arabia for state-of-the-art telecommunications equipment and expertise. However it is important that companies have an on-the-ground

presence in the form of an agent or representative. Companies should also be aware that there is a move towards increased Saudi involvement (i.e. Saudization) in all industries.

For further information, please contact the International Telecommunications Division of Industry Canada, the Africa and Middle East Trade Division of FAITC, or the Canadian Embassy in Riyadh.

ETRI and CRC Co-operate in Telecom Research

During the week of September 20, Canadian and Korean government officials conducted telecom policy discussions. 15 Canadian companies exhibited in the Canadian national stand organized by External Affairs and International Trade Canada at COMNET Korea 93, and it was telecom week at the Canadian Expo pavilion in Taejeon. To cap off the busy week, a Memorandum of Intent was signed between Canada's Communications Research Centre (CRC) and Korea's Electronics and Telecommunications Research Institute (ETRI). The five-year agreement covers the areas of mobile communications, satellite communications and semiconductor technology. The Memorandum will facilitate the transfer and licensing of intellectual property, the exchange of technical staff, joint collaborative research and the organization of symposia, seminars and conferences.

ETRI has had a long-standing relationship with the Canadian telecommunications sector. Telesat Canada was engaged by ETRI for the feasibility study and systems definition stage of KOREASAT, and Teletch has worked with ETRI on VSAT technology developed by the C

