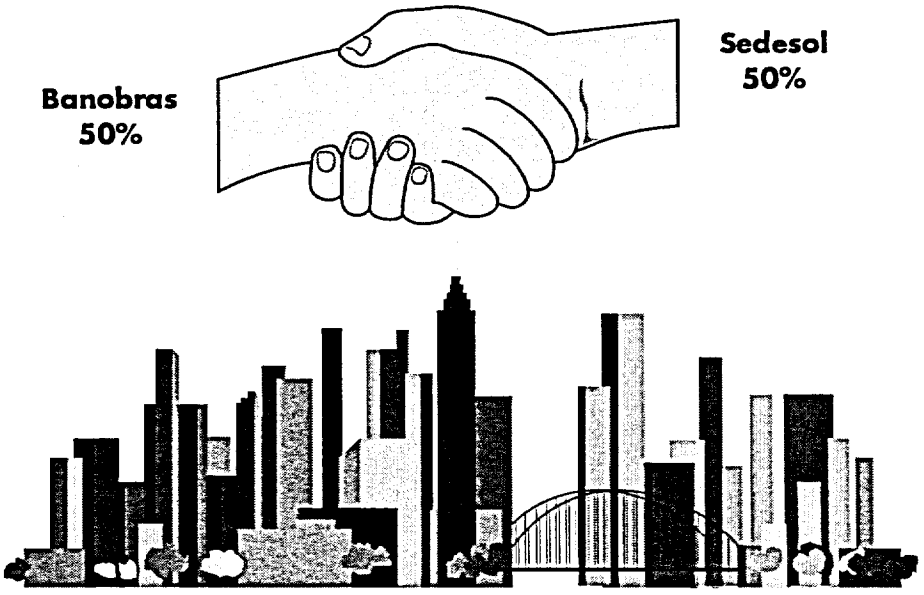
Geomatics Services

THE OPPORTUNITY

Since the late 1980s, Mexico has been engaged in a sweeping endeavor to establish a market economy and to modernize its industries and equip them to compete in global markets. The rebuilding of the nation's antiquated infrastructure is a major part of this effort. Although much has already been accomplished, progress has been severely hampered by a lack of geographical, demographic and cadastral* information.

*Cadastral surveys are those that identify every discrete plot of land by owner. They are used primarily for land-use zoning and property taxation purposes. A Cadastre is a public register of real property.

Note: Currency is Canadian dollars unless otherwise stated.



100 Medium Cities Plan

Almost 80 percent of the geographic information held by the *Instituto Nacional de Estadística, Geografía e Informática (INEGI)*, the Mexican government statistics agency, is considered out of date. This creates major problems for *Secretaría de Desarrollo Social (SEDESOL)* which is the largest user of geo-

HIGHLIGHTS

There are substantial opportunities in Mexico for Canadian companies that provide surveying, mapping and geographic information services.

- **Mexican states and municipalities will spend $200 million on cadastral* systems by 1997;**
- **The NAFTA will gradually reduce restrictions that currently prevent Canadian companies from providing aerial surveying and mapping in Mexico;**
- **Financing for state and municipal expenditures will be assisted by the Mexican federal government;**
- **The Mexican geomatics industry is underdeveloped and many companies use outdated technology;**
- **State and municipal governments have little in-house expertise in geomatics; and**
- **The *Instituto Nacional de Estadística, Geografía e Informática (INEGI)* and the *Secretaría de Desarrollo Social (SEDOSOL)*, the main Mexican government agencies responsible for mapping and cadastral projects, have purchased Canadian-developed information systems.**

SECTORAL REPORT

The Department of Foreign Affairs and International Trade has prepared this summary report on the **Mexican Geomatics** industry sector. It has been produced and published by Prospectus Inc. under the Access North America Program, along with other sector profiles and summaries on business opportunities in Mexico. It is available from:

InfoCentre
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graphic, demographic and cadastral information. SEDESOL is responsible for regional development planning, including the allocation of financial assistance to state and local governments. To fill the information gap, it has embarked on a massive program to completely re-map all of the cities included in the ***100 Medium Cities Plan***. Under that program alone, approximately $200 million will be spent by states and municipalities on cadastral planning by 1997.

The Mexican geomatics industry is underdeveloped, and lacks the capability and capacity to undertake all of this work. Only a handful of companies have the expertise and technology to bid on government tenders for complete integrated projects. In particular, only the largest firms have a capability for aerial mapping and surveying. These services are prerequisites for many projects, and the companies that provide them have a strong influence in the selection of geomatics technologies and services that Mexico will purchase.

At this time, only Mexican firms are allowed to provide aerial mapping and surveying services. Under the NAFTA, these restrictions will be removed, but not until the year 2000. To take advantage of the immediate opportunities and establish a market presence before the restrictions are removed, Canadian companies will have to form joint ventures or technological partnerships with Mexican firms. Under the government's plan, geographical information will be updated every five years. Companies that succeed in introducing their technologies in the initial phases will have an advantage in future bids.

Canadian firms have an advantage in that INEGI has purchased a Canadian-developed geographical information system, SPANS, and it is encouraging states and municipalities to use compatible systems. Only about half of the municipalities involved in the regional development plan have digitized data of any kind, so this represents a substantial opportunity for Canadian firms.

The 100 Medium Cities Plan

One of Mexico's most pressing regional development problems has been an ongoing migration from rural areas to the largest cities, especially Mexico City, Guadalajara, Monterrey and Puebla. Partly because of poor planning and the lack of information, urban growth has been almost completely uncontrolled, leading to severe environmental degradation and overloaded social services.

To counter these deleterious effects, SEDESOL has embarked on a massive program to develop 100 medium-sized cities. The goal is to create an attractive alternative for rural migrants, to encourage balanced growth and to reduce the environmental impact of overloaded social services.

The designated cities are distributed across all 31 states. The program encompasses infrastructure development, pollution abatement and the development of social service facilities. Each of the cities has been assigned to one of four project phases depending on their priority for development. The program began in 1990, and the second phase will be completed some time in 1994.

The overall program is guided by full mapping and geographic zoning of each city. A copy of this information must be provided by the municipality to SEDESOL, which is building a large database. About one-quarter of the cities have been mapped as part of Phase 1 and 2 of the 100 Medium Cities Plan. In each city, the typical project duration is three years from initial planning to completion of cadastral work.

The long term goal is for these projects to be self-funding through increases in tax collection. Property taxes in Mexico go largely uncollected because of the lack of reliable cadastral data, and some estimates predict a 90 percent increase in tax collections as a result of the program. Private industry will

eventually pay for about one-quarter of development costs.

Initial funding and support is being provided by the federal government. The municipality usually provides the funds for planning. Financing for execution of specific projects is provided by SEDESOL and *Banco Nacional de Obras y Servicios Publicos* (BANOBRAS) which is the federal government's development bank. If BANOBRAS provides the funding, the plan must be prepared by a professional consultant. Initial plans typically cost between $70,000 and $100,000 with full implementation running in the $3 million to $10 million range. As of 1993, $40 million had been spent on cadastral work, about half of it financed through BANOBRAS and the remainder financed by SEDESOL.

Overview of the Mexican Geomatics Sector

In 1993, about 18 Mexican companies were actively engaged in the geomatics industry. Only six of them are capable of providing fully integrated services. According to industry sources, the top three companies are *Sistemas de Información Geographica S.A. de C.V.*, *Aerofota S.A.* and *Topografía y Mapas S.A.* These companies use technology from the United States, Canada and France.

There is little existing Mexican geomatics technology, although the *Fundación Arturo Rosenblueth* is developing a PC-based geographic information system. This system is oriented towards integrating information on retail store locations.

The smaller companies, numbering about 12, are mainly occupied with subcontracts from the larger companies. They typically have around 10 employees and tend to use outdated technology. Generally, the larger companies engaged to conduct the aerial surveying and mapping have control over the geomatics technology to be used.

Aerial work is restricted to Mexican companies, and Canadian companies interested in breaking into this market will have to seek out partners. There are many opportunities for technological joint ventures. It has been estimated that there are only about 10 aircraft in Mexico that are properly equipped for detailed aerial mapping.

Customers

The major buyers of geomatics services are municipal and state governments. They provide geographic, demographic and economic information to SEDESOL as part of the system of intergovernmental financial assistance.

Purchasing decisions are not entirely left in municipal and state hands. SEDESOL and BANOBRAS both impose their own conditions for financial assistance and the government statistical agency, INEGI, also plays a role. The need for technological compatibility is a driving force behind purchasing decisions. The lack of such compatibility in the past is blamed for many of the shortcomings of existing data, and officials seem determined to correct these problems. For example:

- INEGI is responsible for producing all of Mexico's maps. It is presently developing an integrated national geographic information system. INEGI is using the Canadian developed SPANS system and is creating pressure for other government agencies to use systems that are compatible with SPANS.
- SEDESOL is the federal department responsible for social development, including the administration of financial assistance plans for state and municipal governments. It maintains a large database incorporating geographic, demographic and economic information. Compatibility with SEDESOL's SPANS technology is a factor in purchasing decisions.
- State and municipal governments are trying to facilitate the integration of geomatics systems and data through a committee known as *Comité*

100 MEDIUM CITIES PLAN
Priority Locations for Phases 3 and 4

State	Cities	Phase
Aguascalientes	Aguascalientes	3
Baja California	Ensenada	4
	Mexicali	4
	Tecate	4
	Tijuana	4
Baja California Sur	Los Cabos	3
Campeche	Campeche	3
	Ciudad del Carmen	3
Coahuila	Ciudad Acuña	4
	Ramos Arizpe, Arteaga	4
Colima	Villa de Alvárez	4
	Manzanillo	3
Chiapas	San Cristóbal de las Casas	3
	Tapachula	3

de Informática de la Administración Pública, Estatal y Municipal (CIAPEM). Its focus is on setting standards for software and information systems.

Municipal decision-making is also influenced by a number of other factors, including the level of in-house training and expertise, the timing of elections and the city's ability to tap into federal and state assistance programs.

Tendering rules vary for federal, state and municipal procurements. In general, a local presence is needed to make successful bids. In fact, some government entities require that the bidder have an office in their state, or at least be prepared to establish one. Projects financed by BANOBRAS require that companies have a representative office in Mexico. The best prospects are cities slated for development under Phases 3 and 4 of the 100 Medium Cities Plan.

There are also significant private sector markets for geomatics services in Mexico, mainly for guiding plant and store locations. In addition, the state-owned oil monopoly, PEMEX, is a major user of geomatics services.

WHERE TO GET HELP

The ***Department of Foreign Affairs and International Trade (DFAIT)*** is the Canadian federal government department most directly responsible for trade development. The InfoCentre is the first contact point for advice on how to start exporting; it provides information on export-related programs and services; helps find fast answers to export problems; acts as the entry point to DFAIT's trade information network; and can provide companies with copies of specialized export publications.

InfoCentre
Tel: 1-800-267-8378
or (613) 944-4000
Fax: (613) 996-9709

The ***Commercial Division of the Embassy of Canada*** in Mexico City promotes trade with Mexico. There are several trade commissioners at the Embassy, and there is a satellite office in Monterrey. Trade Commissioners can provide a range of services including introducing Canadian companies to potential customers in Mexico, advising on marketing channels, assisting those wishing to participate in trade fairs, helping identify suitable Mexican firms to act as agents, and compiling credit and business information on potential foreign customers.

Commercial Division
The Embassy of Canada in Mexico
Schiller No. 529
Col. Polanco
Apartado Postal 105-05
11560 México, D.F.
México
Tel: 724-7900
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Canadian Consulate
Edificio Kalos, Piso C-1
Local 108A
Zaragoza y Constitucion
64000 Monterrey

México
Tel: 443-200
Fax: 443-048

Note:*To telephone México, D.F. dial: 011-52-5 before the number shown below. For contacts in other cities in Mexico, consult the international code listing at the front of your local telephone directory for the appropriate regional codes or contact the international operator.*

International Trade Centres have been established across the country as a first point of contact to support the exporting efforts of Canadian firms. Co-located with the regional offices of Industry Canada (IC), the centres operate under the guidance of DFAIT and all have resident Trade Commissioners. They help companies determine whether or not they are ready to export; assist firms with marketing research and market planning; provide access to government programs designed to promote exports; and arrange for assistance from the Trade Development Division in Ottawa and trade officers abroad. Contact the International Trade Centre nearest you.

The ***World Information Network for Exports (WIN Exports)*** is a computer-based information system designed by DFAIT to help Canada's trade development officers abroad match foreign needs to Canadian capabilities, experience and interests of more than 30,000 Canadian exporters. To be registered on WIN Exports, call: (613) 996-5701.

The ***Market Intelligence Service*** provides Canadian business with detailed market information on a product-specific basis. The service assists Canadian companies in the exploitation of domestic, export, technology transfer, and new manufacturing investment opportunities. The intelligence is used by Canadian business in decisions regarding manufacturing, product development, marketing, and market expansion. The information includes values, volume and unit price of imports, characteristics of specific imports (e.g. material, grade, price, range, etc.), names of importers, major countries of export, identification of foreign exporters to Canada, Canadian production, Canadian exports, and U.S. imports. Two-thirds of the clientele for this service are small business. Call: (613) 954-4970.

The ***Embassy of Mexico***, Mexican Trade Commissioners in Canada, and Mexican consulates can provide assistance and guidance to Canadian companies in need of information about doing business in Mexico.

Embassy of Mexico
45 O'Connor Street, Suite 1500
Ottawa ON K1P 5G4
Tel: (613) 233-8988
Fax: (613) 235-9123

Additional Contacts in Mexico

National Bank of Construction and Public Services

Banco Nacional de Obras y Servicios Públicos (BANOBRAS)
Tecoyotitla 100, Piso 2
Col. Florida
01030 México D.F.
México
Tel: 723-6045
Fax: 723-6177/6179

Secretariat of Social Development

Secretaría de Desarrollo Social (SEDOSOL)
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Regional Markets

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Director del Departamento de Informática

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