



Photo: © Masterfile

The life sciences, with all their manifold promise, will be one of the 21st century's most important sources of new knowledge and technological progress.

New Frontiers in the Life Sciences

Canadian Companies in China and India

BY DENNIS AND SANDI JONES

They encompass everything from medical devices and technologies to pharmaceuticals and plant genetics, and their potential contributions to human well-being and economic prosperity can hardly be overestimated.

Many countries are recognizing the crucial importance of the life sciences industry to their future socioeconomic development. Its significance is underlined by the fact that it has defied the global recession by continuing to grow at a vigorous pace, especially in India and China. The Indian sector earned US\$2.56 billion during 2008, and the sector has been expanding at around 20 per cent per year since 2002. As for China, its demand for medical devices and equipment alone was estimated at US\$4 billion in 2008, and the rate of growth shows no sign of slowing.

Just as important, especially for the future, is that the life sciences opportunities in these two countries are related to some of the most sophisticated and R&D-intensive industries that exist anywhere in the world. This is not a sector that will ever rely on the low-cost manufacturing of cheap, mass-produced consumer goods.

Canada's part in the accelerating development of the global life sciences sector could and should be a major one. The industry already earns about \$4 billion annually through sales of medical devices alone, and exports account for 60 per cent of that total. Human health is the most important side of Canada's sector, accounting for 70 per cent of total revenues and nearly 90 per cent of R&D, and more than half of all Canadian life sciences firms operate in this area. Many of these companies are in the early to middle stages of their

development, especially in the medical devices field, which has about 1,000 enterprises in the small to medium-sized category. Its principal market is the United States, but as developing markets such as China and India evolve, their life sciences sectors will become vitally important destinations for Canadian companies.

It is, therefore, a strategically important sector for Canada. "We are already the third-largest country in the world in terms of biopharmaceutical companies," observes Lewis Megaw, EDC Vice-President, Light Manufacturing. "As Canada's life sciences industry moves ahead and our capabilities become better known internationally, we're going to see tremendous potential for growth and economic benefits."

The power of the market

Several factors contribute to the importance of the Chinese and Indian markets. "The central governments of both countries have identified their life sciences industries as pillars of future economic expansion," says Mark Bolger, EDC's Regional Manager for Asia. "As a result, there's a strong push toward developing advanced technologies and capitalizing on the growth of intellectual property in these sectors. Demographics will also play a big part – these two countries are the world's most populous markets, with expanding consumer classes in each, and an aging population in China as well. So if you're a life sciences company looking for locations with great promise, India and China are certainly in the front rank."

Canada's firms have strengths that will, if nurtured, allow them to become increasingly important players in these markets. They can draw on the advanced and innovative R&D being conducted in Canadian universities, research institutes

and hospitals, as well as on the leading-edge technologies of associated Canadian industries such as telecommunications, microelectronics and informatics.

Canada is particularly competitive in a number of specialized subsectors, such as diagnostic devices and analytical equipment. Other assets are less tangible but nevertheless very important. "We're perceived very favourably abroad," observes Bolger, "because we have formidable expertise in setting up everything from hospitals to educational programs. This means we're highly competitive not only on the products side but also on the services side."

EDC and Canada's life sciences sector

EDC sees India and China as two of the greatest opportunities for Canada's life sciences companies. We already support 200 of these firms by providing them with insurance services and helping them find working capital to finance their overseas operations. EDC also works with several of the industry's associations, such as MEDEC, the Trillium Medical Technology Association and the Health Technology Exchange. This cooperation takes several forms, including joint EDC/association involvement in inbound and outbound Canadian trade missions, and in international trade shows such as Bio-Europe, Germany's Medica Trade Fair and the China Medical Equipment Fair.



▲ China imports almost 90 per cent of its high-end medical devices, particularly diagnostic imaging equipment, a niche where Canada excels.

EDC and SRED

Obtaining financial resources at the early stages of product development is often a hurdle for smaller companies. This is especially true in the life sciences sector because it is very specialized, and lenders with the necessary understanding of an innovative product can be hard to find. Currently adding to these difficulties is the shortage of capital resulting from the global recession and tightened credit markets.

The federal government's Scientific Research and Experimental Development (SRED) tax credit can help companies in this position. Its drawback is that the tax refund, which can provide valuable working capital, is not available until the R&D is complete. Under EDC's Export Guarantee Program, however, companies doing eligible R&D work can receive an advance against their SRED refund. This is made available as an EDC-guaranteed loan from their bank, which they can use to finance their product's development.

For more on EDC and SRED, you can refer to "Scientific Research and Development Tax Incentive Program" in the winter 2009 issue of *ExportWise*, available at www.edc.ca/exportwise.

Promising, but no pushover

India and China are trying to update the obsolescent technologies currently used in their healthcare systems, but since they cannot produce the advanced equipment they need, they must turn to foreign suppliers. China, for instance, imports almost 90 per cent of its higher-end medical devices, especially diagnostic imaging equipment. Canada excels in the diagnostic devices sector, so there will be many opportunities for our manufacturers to sell ultrasound, ultraviolet, infrared and x-ray imaging technologies to Chinese customers. The market for imported orthopaedic and assistive equipment is also headed for rapid growth, since China's population is aging and the country currently produces few such devices.

India also imports nearly all its diagnostic imaging equipment, including gamma ray and x-ray apparatus, computed tomography apparatus and ultraviolet and infrared apparatus. Again, these are niches where Canada has much to offer, even in the face of stiff American, European and Japanese competition for the market's higher end. By contrast, goods at the lower end of the Indian and Chinese markets – such as consumables and basic diagnostic technologies – offer less promise to outsiders since domestic companies dominate these subsectors and are extremely competitive within them.

Getting a foothold in either country can be difficult. China does not actually have a single life sciences market, but rather a mosaic of many smaller markets, each centred on a relatively autonomous city or regional government. Regulatory

policies vary greatly from place to place as a result, and what works in one jurisdiction may not work in another.

In India, import policies for medical goods depend enormously on what the product is and who purchased it – government healthcare organizations do not have to pay duties, for example, while private-sector clinics may be liable for them.

These characteristics underlie two of the principal challenges of doing business in China or India. First, a company must understand how to comply with the vast array of regulations applied to medical products, and second, it must learn to navigate the often-convoluted processes that govern procurement.

Added to these is a third obstacle, which is establishing effective distribution channels. This is easier in the large urban markets, but that is also where the competition is fiercest. The greatest needs are often in rural areas, but it is hard to distribute goods there and it can be difficult to develop products that are competitive in these poorer environments.

Partnering with a local manufacturing firm, distributor or representative may be the only way to remove these barriers – but a company must apply rigorous due diligence before entering into any business agreement with such partners. The Canadian Trade Commissioner Service can often help by providing local market and company information, potential business prospects, key contacts searches and advice on solving crucial business problems. Companies can also consult their industry associations for contacts and advice. Less specialized but also useful are the various trade chambers and business councils in Canada that have China and India as their primary focus.

Not-so-risky business

Intellectual property (IP) risk at the high end of the life sciences sector seems to be fairly insignificant in both India and China. This is partly because these technologies tend to be niche-oriented and aren't sold in the volumes that would attract piracy, and partly because they are advancing so fast that a counterfeit would be obsolete by the time it was ready for the market. Even so, a company should register its IP in both countries. This is especially important for joint ventures between Canadian companies and local firms, where different perspectives on ownership can sometimes raise a host of problems.

Payment risk isn't high in either market, assuming a company takes



▲ India imports nearly all of its diagnostic imaging equipment, niches where Canada has a lot to offer.

reasonable precautions. Large, urban medical complexes or large corporations are not generally a payment concern, although small rural hospitals and clinics present somewhat more risk. With customers such as these, EDC's Accounts Receivable Insurance (ARI) can secure a company against the risk of non-payment.

A broader threat to Canada's life sciences sector may lie in failing to pursue the Chinese, Indian and other emerging markets as energetically as they deserve. Leaving them to our competitors for too long could shut us out of many enormous opportunities, so the sector must find ways to diversify and expand beyond the United States. Fortunately, numerous Canadian companies have recognized this necessity and are doing something about it.

Laborie Medical Technologies

One of these forward-looking firms is Laborie Medical Technologies (LMT) Inc. Founded in 1967 by its current Chairman, Ray Laborie, and now based in Mississauga, Ontario, LMT began life as a surgical-instrument repair service.

During the 1980s, Laborie became interested in the field of urodynamics – the investigation of disorders of the lower urinary tract – and developed the first fully computerized system for diagnosing these disorders. It wasn't long before LMT's new urodynamics instruments were attracting positive attention from all over the world, and the company rapidly transformed itself into an exporter.

LMT began investigating the Chinese market in the mid-1990s, but it soon became clear that breaking into China would require a representative who knew the country and its medical system. The company found the right person in 1997, when Laborie hired a US-educated Chinese neurosurgeon to set up and manage a subsidiary office in Beijing. By 2004, LMT had gained 75 per cent of the Chinese urodynamics equipment market, and the local office now has a staff of 10.

The company came to India later than to China, and sells through an Indian distributor rather than a local office. Laborie has found that the Indian market is less aggressive than the Chinese in its uptake of urodynamics technology, so he has begun offering local training courses to introduce doctors to LMT's technology, demonstrate its effectiveness and promote the benefits of acquiring LMT devices for their clinics and hospitals. The company also uses this marketing strategy in China, where it has proven to be very effective.

LMT has experienced its share of the procurement and regulatory difficulties mentioned earlier. "Often," says Laborie, "the equipment is bought not by doctors, but by purchasing agents who make procurement decisions based on price rather than on the advantages of one machine over another. Regulatory issues have become a concern as well. When China abruptly introduced a set of new regulations for imported medical devices, for example, they didn't include a grandfathering clause, so even equipment that was already in place had to comply with the new standards. We had to sort out things like the differences between the wording on our packing slips and the wording on the equipment itself. We eventually cleared it all up, but the new rules kept us from

selling anything in China for a couple of months."

LMT uses EDC's Accounts Receivable Insurance (ARI) to protect its revenues, and the firm is considering working with EDC on projects to acquire other assets. "We're doing very well in North America right now," Laborie says, "but we don't know what conditions may be like in five years. For us, the best way to survive is to pioneer new products, new technologies and new markets."

Dextran

Dextran Products Inc. manufactures dextran, a complex organic molecule that was first synthesized in the 1930s. The company has been based in Toronto since 1969 and is run by George Usher, the company's chairman and owner. Its major human-health products are DEAE Dextran, dextran sulphate and various versions of the basic dextran molecule, which are used to manufacture drug delivery products and other therapeutic compounds. A veterinary product, Iron Dextran, provides a treatment for anaemia in piglets.

The company ships about 35 per cent of its output to the United States and 45 per cent to other foreign destinations; only 20 per cent is sold in Canada. It has been exporting Iron Dextran to China since the 1980s, and India is showing increasing interest in its other dextran-based products.

"A number of Indian companies are setting up to manufacture compounds for the big pharmaceutical corporations," Usher says. "Some of those products

require dextran, so the Indian firms are coming to us for the semi-raw materials they need. We've built a reputation as a trustworthy supplier of a high-quality product, and that gives us a big competitive edge."

The company uses the resources of the Canadian Trade Commissioner Service in both India and China to look for business contacts and representatives; it is also listed in

◀ Laborie Medical Technologies hired local experts to set up and manage an office in Beijing.



Photo: Courtesy of Laborie Medical Technologies



▲ Dextran Products has been exporting to China since the 1990s, and India is now showing increased interest.

the Chemical Buyers Guide, which brings in other contacts. Its business model is to sell through agents, and these relationships usually start with email exchanges followed by a face-to-face meeting in China.

Before committing to an agent, the company does careful due diligence, often with the help of EDC. “At some point,” says Usher, “we call up EDC and ask them to check out the financial status of the potential agent. If EDC okays the company, we’ll do business with them, but will insist on payment by letters of credit or cash against documents until we have built up our confidence in them. We also use EDC’s ARI to make sure we’ll get paid.”

One of the company’s most important strengths, Usher believes, is its flexibility. “The dextran market itself is rather small, so we’re not a very big company. But being small makes us nimble, so we can adapt quickly when a buyer asks us to modify our basic dextran product for a new purpose. What we do, essentially, is tailor our molecules very precisely to our customers’ needs.”

Convergent Bioscience

Convergent Bioscience Inc., with its head office in Toronto, was founded in 1995. After licensing an innovative technology developed at the University of Waterloo, it began manufacturing extremely sophisticated instruments used by pharmaceutical companies to analyze proteins and other large organic molecules called “biologicals.” Biologicals are used throughout the pharmaceutical R&D chain, and these analyses are required by government regulatory agencies whenever a company applies for approval of a new drug or therapy involving them.

Because they work so quickly, Convergent’s analyzers are used by the top 10 pharmaceutical corporations in the world, and by 17 of the top 20. “Speed is essential in pharmaceuticals development,” says Vice-president Ed Chase. “Our analyzer is unique in how quickly and accurately it provides data about a biological, and that’s one of the factors in our success. A second competency that distinguishes us from our competitors is the extensive application support we provide to our clients anywhere in the world, which involves helping them develop analytical methods for their molecules. As a result, our revenues have increased fifteen-fold in the last five years.”

Convergent reinvests a substantial proportion of those revenues in its R&D, which will enable it to commercialize another new product within the next two years. It has also been able to attract venture capital because it has become a well-established company, and accessing funds is much easier than it was five to 10 years ago.

Exporting its analyzers was part of the company’s business plan from the beginning. The United States is its major market, but its expansion into non-U.S. markets has received a boost from the nature of its technology.

“Our clients use our instruments to develop analytical methods for testing their biologicals,” explains Chase. “But if a client decides to have a biological tested by a partner or subsidiary, the other party has to use exactly the same analytical methods, and this means it has to buy our technology. Many of our U.S. clients have European operations or partners, so a lot of our business there is driven by this transfer of analytical methods. This is happening with India and China as well, where our clients’ partners also have to purchase our technology. They buy the required instruments from our distributors, whom we train to provide both on-site service and applications support.”

In Chase’s view, the big pharmaceutical companies are looking to India and China for two major reasons: high skills and low cost. “Both countries are turning out thousands of talented science graduates, and hiring a scientist in China costs approximately a fifth to a quarter of what it does in the United States. Moreover, their governments are pushing the establishment of contract manufacturing organizations and

contract research organizations, which can partner with pharmaceutical companies in the U.S. and the European Union to help develop their local biotechnology skills and infrastructure.”

Convergent hasn’t had any problems with payment or IP protection in its Chinese and Indian operations, although it did use EDC’s ARI for its first Indian sale. Its main challenges, says Chase, have been the logistics of getting Canadian staff to such distant markets, the language barrier in China and the undercapitalization of biotechnology firms in both countries. None of these problems has been insurmountable.



▲ Convergent Bioscience reinvests a substantial proportion of its revenues back into R&D.

As the experience of these three companies shows, there is a compelling case for Canada’s life sciences sector to find its place in the markets of China and India. They make up two of the greatest opportunities on our horizon, and there is no doubt that we have the technologies, the products and the expertise needed to enter them. We have barely begun to explore their promise, and the rewards of doing so could be very rich indeed. ■

CLICK ...

- > mbolger@edc.ca
- > lmegaw@edc.ca
- > www.convergentbiosci.com
- > www.laborie.com
- > www.polydex.com