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Report on the Infrastructure of Advisory Services for Entrepreneurs in the Waterloo Region

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Industry Canada

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Executive Summary

Introduction

This study is part of an international study being led by the Centre for Economic and Business Research in the Danish Ministry of Economic and Business Affairs on behalf of the International Consortium on Dynamic Benchmarking of Entrepreneurship. Up to eight countries will be participating in the study, each focusing on an in-depth examination of a successful region in their country.

This study is designed to examine the premise that, since managerial incompetence is the major cause of failure by small and medium-sized enterprises (SMEs), the one key to success is a strong regional infrastructure that can help entrepreneurs become good managers. Such an infrastructure has three characteristics. It has:

- a comprehensive selection of specialized business service providers;
- a high commitment to support entrepreneurs among the business community, including large firms, in the region; and
- effective networks, formal and informal, among business service providers in the region.

The results of this examination should provide insights into how government can play a useful role in creating a strong regional entrepreneurship infrastructure.

The Waterloo region was chosen for the Canadian study because it is sufficiently small that the infrastructure in place for entrepreneurs can be clearly traced to public and private initiatives aimed at entrepreneurs. In larger centres, such as Toronto, Montréal, Vancouver and Ottawa, many other influences may be serendipitous but are not directly linked to creation of a strong entrepreneurship infrastructure. For example, larger centres may have much bigger local markets, more service providers who can make their living off large companies and an abundance of resources, among other influences. In the Waterloo region, the available resources are home-grown while the market for products is mostly outside the region, so the region has had to create its own opportunities and infrastructure.

This study is based on 20 in-depth interviews with leaders in all important sectors of the community, as well as on detailed Internet searches. It was not possible, given the time constraints, to conduct more extensive surveys to provide more complete statistical data. However, the consensus of the interviewees was strong enough on most issues that it is possible to draw some conclusions. It is hoped this example will give a clear indication of what goes into creating a successful entrepreneurship infrastructure.

Historical Context

The local economy in the Waterloo region, consisting of three cities — Cambridge, Kitchener and Waterloo — and four townships, spills across political jurisdictions to include the city of Guelph in adjacent Wellington County. With a population of more than 500 000, the area has acquired critical mass as a regional economy, having enjoyed consistently above-average growth through good times and bad.

The region has a strong tradition of self-reliance and entrepreneurship formed in the 19th century by waves of immigrants, notably from Scotland and Germany. The economic culture they built has brought prosperity to the region through the formation of some major firms, such as Schneider Foods, Krug Furniture, Mutual Life Insurance (part of Sun Life after a string of mergers), Electrohome and Home Hardware, to name just a few firms established up to a century ago.

From the latter half of the 1980s through the 1990s, the regional economy suffered a decline in the manufacturing sector as a consequence of globalization, which affected all developed economies. Perhaps the Waterloo region was affected even more than other regions in Canada because of the high proportion of its labour force employed in manufacturing — 25.8 percent in 1991, compared with 17.1 percent for the province of Ontario and 14.4 percent for all of Canada. Companies in sectors such as rubber, clothing, leather and primary metal industries, which employed one third of the region's manufacturing labour force in 1991, all shrank significantly over the following decade, cutting back their total employment by 25 percent.

However, gains in other manufacturing sectors — notably the electrical and electronics sector, and automotive and related industries — more than compensated for these losses. A Toyota assembly plant established in the second half of the 1980s helped trigger this economic recovery; the plant is now the biggest employer in the region. As a result, the proportion of the region's labour force employed in manufacturing rose to 26.3 percent in 2001, while the proportion declined to 16.5 percent in Ontario and to 13.9 percent in Canada.

The technology sector has been the most exciting part of the regional economy over the past 10 or 15 years. It has developed into a remarkably diversified cluster, led by Research In Motion (RIM), the exemplary home-grown technology company that made a big impression on the international scene with the Blackberry. Other local success stories include Open Text, DALSA and Descartes Systems, along with others, such as PixStream, Blue Gill and Mitra, that were sold to foreign firms for a total of \$1.2 billion. Many internationally known companies have also established research or manufacturing operations in the region, including IBM, Siebel, Cisco, LSI Logic, Agfa, Adobe, Sybase and many more.

According to Ian Klugman, President of Communitech, which is completing a census of technology companies in the Waterloo region, there are now about 400 technology companies in the region, employing about 25 000 people. Although this is less than 10 percent of the labour force, various estimates of the sector's contribution to the regional Gross Domestic Product (GDP) range from 20 to 30 percent.

The most important contributors to this remarkable success have been four educational institutions, all of which are ranked among the best in the country — the University of Waterloo (U of W), which Maclean's magazine currently ranks as the best overall university in Canada;

Wilfrid Laurier University (WLU); the University of Guelph; and Conestoga College Institute of Technology and Advanced Learning, which has ranked first among Ontario community colleges for seven consecutive years. U of W, with the largest faculty of mathematics and computer science in the world, has a policy of allowing professors to own the intellectual property (IP) they develop in the course of their university research.

The region's municipal governments have not been amalgamated (as have some other regional economies in the province, including Toronto), but the three cities and four townships work together effectively, having combined their economic development activities under the roof of a single organization (Canada's Technology Triangle).

In making the transition from the old to the new economy, the Waterloo region has adjusted its strong manufacturing base to modern exigencies and laid the foundation for the emergence of a truly significant, diversified high-technology (high-tech) cluster. The drivers have been:

- the universities and community colleges, which provide superb training for entrepreneurs in the region and elsewhere;
- U of W, which has generated proportionately the strongest flow of high-tech spin-offs in the country partly as a result of its generous IP policy;
- the diversity of the technology sector, which reflects the range of the universities' expertise and embraces a wide range of technologies, enabling the region to avoid the vulnerability entailed in relying on one single industry, such as telecommunications;
- a strong culture of entrepreneurship and self-reliance, allied to an extraordinarily collaborative culture, in which individuals are genuinely committed to helping others for the good of the region;
- the four levels of government, municipal, regional, provincial and federal, which have made major investments to create the right environment for the development of a modern economy; and
- the Toyota plant, which has rejuvenated the automotive and metal industries.

The Entrepreneurial Infrastructure

Before 1990

Prior to the emergence of the booming technology sector, the infrastructure of business service providers was highly informal and significantly less developed than it is now. In 1990, there were no venture capital companies or organizations of angel investors, although local wealthy families have always been keen to invest in the region. Businesses in the region tended to rely on Toronto for professional and management consulting services, none of the country's major law firms had a significant presence in the region and, although auditing/consulting firms existed, the region was never their priority market. Banks were present, of course, while the Business Development Bank of Canada played a useful role at the margin.

While universities and community colleges were valuable community assets prior to 1990, their strong technological orientation offered few prospects for economic development because the technology sector was still embryonic and had few commercial applications at the time. Even then, the curricula were geared to the business community, thanks mainly to co-op education,

but the integration of the educational institutions with the business community was less comprehensive than it has since become.

In effect, the regional economy prospered because of its strong ethic of entrepreneurship and hard work and the collaborative tradition of its citizens. Local families that built large corporations such as Electrohome and Schneider Foods were munificent but were not oriented toward regional economic development. Some of the most successful entrepreneurs who started in the 1970s or 1980s say they have never paid for management consulting services. If they need advice, they get it from colleagues, friends or other entrepreneurs, or just figure it out for themselves. (It is important to distinguish between management consulting, which is generally a discretionary service, and professional advice, such as from bankers, lawyers and accountants, whose services are necessary and therefore almost universally purchased.) Before 1990, the community of management consultants was passive, in the sense of responding to demands for their services rather than actively seeking out new opportunities — a sign, perhaps, that the supply of these business service providers was well balanced in keeping with the limited demand

Today

Because of the region's dynamic growth, the infrastructure for entrepreneurs has developed considerably. However, this development has not been driven by the business service providers themselves or by the large firms that so often drive regional economies. Rather, a number of initiatives within the entrepreneurial sector have driven the development of the needed infrastructure. These include:

- tight cooperation between local entrepreneurs and the educational institutions, which has led to the creation of state-of-the-art training for both entrepreneurs and the workforce;
- the founding and successful experience of the region's first local venture capital company (Tech Capital Partners), which has laid the foundation for strong local financing;
- a small number of large firms of accountants and lawyers, which have chosen to specialize in SMEs;
- the inspiring example of successful companies such as RIM and Open Text; and
- perhaps the most important initiative of all, Communitech, which was established by local entrepreneurs to provide a regional network for entrepreneurs and business service providers, and has facilitated instantaneous, detailed communication between entrepreneurs in the context of the building on the cooperative regional economic culture.

Among its many services, Communitech runs 20 or more peer groups for chief executive officers or key executives in technology companies and provides a forum for business service providers to be in touch with the needs of their clients and with each other. It also runs Viatech, which provides feasibility assessments for business plans and "boot camp," a training program for new entrepreneurs. Virtually everyone who has a stake in the technology sector belongs to Communitech, which offers an impressive array of services and initiatives to meet their needs.

The peer groups of Communitech and other, independent network organizations have been the principal source of guidance for entrepreneurs with growth companies, which probably accounts for the relative scarcity of management consulting firms in the region. Peer groups may not work as well in regions that don't already have a collaborative economic culture, but when a collaborative tradition exists, peer groups may be more effective than most management

consulting firms. This is because peers who have experienced specific problems can recommend tested solutions for entrepreneurs who are facing the same problems.

Management consultants in the region have been more successful in helping entrepreneurs with problems that are too complex or detailed to rely on peer groups, especially where the value of paying for such services is immediately apparent. Examples of these services are: completing applications for Scientific Research and Experimental Development tax credits, developing export markets in a specific state or region of the United States, and implementing human resources or health and safety practices to meet regulatory requirements.

With a few notable exceptions, the country's major law firms and the big four management consulting firms have vacated the Waterloo region. This has left the field open to mid-sized and "boutique" firms; there is healthy competition, but still enough business to go around. The smallest management consulting firms are not in a position to be flexible with their fees, but larger ones are usually prepared to accommodate customers, either through some kind of pro-bono work or through flexible collection policies.

Institutions and organizations outside the entrepreneurial sector have also been instrumental in creating a supportive environment for the development of the entrepreneurial infrastructure. The cumulative effect of their initiatives has transformed the infrastructure, notably:

- the convergence of U of W's specific competencies and the technological demands generated by the emergence of the personal computer and the Internet;
- the co-op programs offered by all the educational institutions, which ensure that students are given practical exposure to the business world (and vice versa) in the course of their studies;
- the highly effective strategies of local governments in creating an environment conducive to entrepreneurial growth;
- a solid mix of programs at the federal and provincial level, which have provided necessary training and funding, particularly for the technology sector; and
- the spin-off synergies from the Toyota plant.

Among federal programs, the most widely used include: the Industrial Research Assistance Program (IRAP), which provides technical and business advisory services, along with potential financial support, for the development of technological products and services; the Program for Export Market Development (PEMD); Scientific Research and Experimental Development (SR&ED) Program, a federal tax incentive program to encourage business research and development; and Technology Partnerships Canada (TPC), which invests in commercialization projects and which is currently being renamed and redesigned. Also, the federal government co-funds, with U of W, the Canadian Innovation Centre, which assesses marketability for new technology — most often for new ventures, but also for established firms. The centre does market analyses, competitive reviews, software evaluation and much more.

The province provides a Business Advisory Service in southwestern Ontario, which keeps in touch with innovative growth firms and helps them to access government programs or other forms of assistance. The province also started a network of self-help stores, called Enterprise Centres, now jointly funded with the cities in which they are located.

It should be noted that a number of things that might have been expected to happen in an emerging technology cluster have not yet come to pass. Chief among these is the absence of a spin-off culture, which characterizes many other technology clusters, such as those in Ottawa, California's Silicon Valley and Boston's Route 128. In these clusters, major firms often encourage their employees to quit their jobs to start their own businesses and will sometimes even provide them with financial backing.

In the Waterloo region, companies like RIM and Open Text have understandably been loath to motivate their best employees to leave, which may have delayed a second wave of technology entrepreneurs once the pioneers had become successful. However, a second wave is now building; the presence of a much stronger entrepreneurial infrastructure will ensure that it does not stall a second time.

The large firms that have been successful have also played a relatively minor role in mentoring emerging entrepreneurs; their leaders do not personally invest in new ventures. This is generally felt to be completely reasonable, especially since firms such as RIM have contributed large amounts to develop the educational and technological infrastructure of the region.

The other important gap in the Waterloo region is the absence of significant, professionally run organizations designed to facilitate angel investing (angel investors are wealthy individuals who invest in early-stage ventures). Most angel investing is still done on an informal basis through personal contacts. These organizations act as filters for putative entrepreneurs, testing their business plans and forcing them to think through their strategies and planning. Communtech partly fills this role, but freely admits that this is a gap that needs to be addressed.

As a result, the managerial skills of entrepreneurs in the region have not changed dramatically in the past 15 years. However, the talent exists for the emergence of a steady stream of future stars. In the technology sector, the "techies" are invariably aware of their shortcomings as managers and are not shy about seeking partners to handle the business side of their enterprises. In other sectors, entrepreneurs are showing a greater awareness of gaps in their managerial knowledge and a greater willingness to use advisors business service providers; however, there is still room for improvement on this score.

There is general recognition that the region's entrepreneurs have not yet fully embraced the concept of using professional business service providers and that, in particular, use of management consulting services needs to be expanded significantly. Accordingly, entrepreneurs and others in the region have helped create strong alliances between large companies, universities and governments to put that infrastructure in place.

Going Forward

Many recent initiatives, undertaken in the past three to five years, have had too little time to make a big impact thus far. Within the next 5 to 10 years, however, they should dramatically change the environment for entrepreneurs in the region, particularly for the technology sector. They include:

- innovative initiatives at U of W and WLU, which are tailored to the needs of entrepreneurs and are leading the way in entrepreneurship education for the whole country;

- state-of-the-art research centres established with the help of some of the largest donations from private individuals in Canada, including the Perimeter Institute for Theoretical Physics, the Institute of Quantum Computing and the Nanotechnology Engineering Program at U of W;
- creation of a new U of W pharmaceutical school in Kitchener (as a result of a \$30-million donation by the city) and relocation and expansion of the U of W School of Architecture in Cambridge (thanks again to large private and city contributions), both of which are expected to generate significant spin-offs of associated business enterprises; and
- the research and technology park currently being built on the U of W campus, including the accelerator centre, a comprehensive incubator for technology start-ups.

Governments continue to provide effectively targeted support. In addition to the programs mentioned previously, the following are playing an important role:

- federal government programs:
 - the Canada Small Business Financing (CSBF) Program, which underwrites 85 percent of loans made by private sector banks to modernize, establish, expand or improve small businesses;
 - the Strategis website, which guides businesses to the myriad of government programs, regulations and services, and provides referrals to other organizations that can help with any aspect of management;
 - a network of one-stop shops that can help entrepreneurs with any problem they ask about. These are co-funded and managed by the federal and provincial governments;
 - a reduced tax rate for small enterprises; and
 - assistance for SMEs wishing to get business through the government's procurement process.
- provincial government programs:
 - the Summer Company Program, which encourages entrepreneurship in young people;
 - five centres of excellence (Energy, Communications and Information Technology, Earth and Space Technology, Materials and Manufacturing, and Photonics), which have assumed an important role in the development of technical and technological businesses by linking universities and community colleges to enterprises;
 - a peer-group initiative (the Wisdom Exchange) allied with publication of a series of reports or studies on topics of importance to leading growth firms;
 - a variety of programs to support education and training, including apprenticeships, many of which impact SMEs; and
 - similar to federal tax incentives, a lower tax rate on corporate profits below \$400 000 a year.

However, there are still a few gaps in services available. Chief among these are:

- continued reliance on a Toronto-based infrastructure — for instance, one major accounting firm that is very active among SMEs (in and outside the technology sector) does not provide local services for initial public offerings (IPOs), preferring to use its Toronto office if this service is needed in Waterloo;
- the relatively undeveloped local venture capital market — despite the establishment of two funds by Tech Capital Partners, there is a need for one or two more local venture capital firms;

- effective angel investor groups that can meet early-stage financing requirements, as mentioned previously; and
- a lack of global marketing expertise — Tech Capital Partners has found this to be a persistent weakness in companies it examines (for instance, Open Text runs its marketing out of Chicago, so the local community does not get the benefit of rubbing shoulders with globally competitive talent).

Principal Conclusions

1. The Waterloo region has a good range of specialized business service providers that are part of the local community and not from outside the region. Local educational institutions play an exceptionally large role, both as a source of new technology and as a training forum for new and established entrepreneurs. However, management consultants providing discretionary services play less of a role in the region's economy than in many other clusters.
2. There is a strong commitment by established businesses to support entrepreneurs. However, their support is directed through institutional channels, particularly through educational institutions, and they do not play a significant role as mentors or sources of spin-off companies. In contrast, smaller firms do more than their share of mentoring through the vibrant networks that bind this community. Together, these big and small established businesses provide all the support necessary to develop entrepreneurs, directly or indirectly.
3. The Waterloo region is, perhaps, one of the most connected business communities in Canada. The networks that bring together all the players in the region — entrepreneurs, students, investors, business service providers, governments and educational institutions — are led by Communitech in the technology sector, but they are present in all parts of the regional economy. These networks, particularly in the technology sector, fulfill many of the roles required to effectively support entrepreneurship. The enormous diversity of the technologies in the region is another important factor — not only has it insulated the region from economic setbacks in any one industry (as in Ottawa, for example, where telecommunications is the dominant industry), but it has facilitated success of the technology network because it is easier for companies to share ideas and problems with each other when they are not direct competitors.
4. All four levels of government have played critical roles in the economic development of the region, but the regional government and municipalities have been exceptionally aggressive and imaginative in creating an infrastructure for the new knowledge-based economy. Although the federal and provincial governments provide important and useful core services, they are not as integral a part of the community as are local governments. The ability of the municipalities to work cooperatively together has also been essential to the region's success.

