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Bettering Communities Through Innovation: Industry, Universities and Cities Working Together

INNOVATION IS GAINING a sharp sense of urgency as an economic, social and environmental imperative for Canada. Before it can thrive, innovation that leads to economic development needs support from four key sectors: a region's business community; a municipality or regional authority acting through its economic development office; its post-secondary education community; and the major regional infrastructure, be it an airport, port, or energy grid.

That recipe comes from Mike Williams, Senior VP. for Investment Attraction at the Toronto Region Research Alliance (TRRA). Informed opinion supports his menu for successful economic development, but getting the parts to work together has posed a very Canadian challenge.

"Our capabilities in science and technology are strong. Our capabilities in commerce are among the weakest in the developed world," comments Doug Barber, Distinguished Professor-in-Residence at McMaster University and co-Founder of Gennum Corporation.

That is changing. Williams comments, "Ten years ago, none of the four key sectors had serious interest in economic development in the Toronto area. The shift is dramatic. All four are interested now." Everyone is waking up – governments, regions, communities, academic and industrial sectors across Canada.

Twenty years ago the towns of Cambridge, Kitchener and Waterloo, Ontario, merged their economic development departments to create what John Tennant, the former CEO of Canada's Technology Triangle Inc., calls "a model public-private regional economic development partnership attracting investment, new businesses and talent to the Waterloo region." The result: powerful innovation and growth.

"We collaborate closely," says Tennant, "with local government, with the second and third largest chambers of commerce in Ontario, with the region's technology organization; and our post-secondary institutions are a key part of our mix." These are the universities of Waterloo, Wilfrid Laurier and nearby Guelph (which collaborates especially in health sciences), and Conestoga College.

"Our city partners have made important strategic investments to attract satellite campuses and help develop think-tanks," Tennant adds. Success in the first generation now frames the second, fueled in part by private money from Research In Motion executives and others who made their fortunes and are paying back.

The private component in Waterloo Region's power alliance set up Communitech to represent the technology sector. Communitech works to assist early stage companies: "We mentor about 140 of them in the Waterloo region each year," says Avvey Peters, Executive Director of Government Relations. "Our over-riding philosophy is that the entrepreneur-driven economy is

what will be most helpful to Ontario and Canada. Innovative growth needs three supports: money, brains and culture." Access to capital and links with local academic institutions address "money and brains." The culture factor is intangible – and harder to instill. Waterloo Region's strong entrepreneurial background helps. "We are less cautious here," says Peters. "This community readily accepts risk-taking and entrepreneurship."

It also celebrates entrepreneurs through the Accelerator Centre at the University of

Edmonton's commercialization centre, the TEC Centre, "in the heart of downtown," says marketing and communications manager Nadia Andersen. "Downtown" suggests parallels with Vancouver's Great North Way Campus, and the MaRS Discovery District in Toronto. Set among major hospitals and universities, MaRS is central to one of North America's most concentrated research and innovation clusters. CEO Dr. Ilse Treurnicht describes a "market-facing" approach: MaRS provides scientists, technologists and social entrepreneurs with resources they need – expertise, programs, facilities, funding and networks – to accelerate the growth of successful Canadian enterprises.

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Waterloo's Research and Technology Park. Tom Corr, the Accelerator Centre's CEO and the university's Associate V.P. for Commercialization, calls this "a good example of the three levels of government working with industry, universities and venture capitalists to create a successful accelerator model. We will soon be expanding, bringing the Accelerator Centre to a total of 38,000 square feet."

Peter McKinnon, President of the University of Saskatchewan and a member of the Science and Technology Innovation Council, referred to the Competition Policy Review Panel's report, *Compete to Win* (June 2008), adding, "The framework we need to launch innovation and partner-

ships depends on leaders' attitudes, and on their determination to explore possibilities for partnerships, then work hard to engage the potential partners in ways that will lead to success. We're in a different world: to participate in our complex research and innovation development you can't succeed on your own. You need a much broader base of participation."

TEC Edmonton is an acceleration joint venture helping "inventors, entrepreneurs, spin-off/start-up companies and investors access facilities, management and financing expertise to succeed in technology ventures." Collaboration among federal and provincial governments, the University of Alberta and the City of Edmonton helped locate TEC

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In just three years, MaRS' network of seasoned advisors has provided hands-on business-building services to over 300 early-stage ventures across Ontario, and across many sectors. The MaRS Centre has attracted 60 tenant organizations, from research labs to incubator ventures and mature companies. The Centre designed its conference facilities with an eye to promoting innovative collaborations.

The MaRS Centre is already growing. MaRS chose a California-based real estate company as a partner to expand its urban footprint by 2010. Dr. Treurnicht describes the promise of that expansion: "With a global partner like Alexandria [Real Estate Equities Inc.] Phase II puts MaRS and the region's technology community on the world stage."

That may be true of Edmon-

ton, too. "Partnerships are the core of TEC Edmonton's success in technology commercialization," says CEO David Cox. "Our downtown location signals to business the possibilities of accessing technology, partnering with early-stage companies, and investing in new opportunities."

Edmonton's challenge is channeling booming economic growth, not creating it. Ron Gilbertson, CEO of the Edmonton Economic Development Corporation, speaks of steering strategy to create "higher quality jobs" because "we don't have enough people for the jobs we have. We're asking, 'Which sector clusters make sense now and into the future?'" Gilbertson quotes Wayne Gretzky's father, Walter: "Don't follow the puck into the corner. Figure where it'll come out – and be there!"

He describes Edmonton Research Park: "Phase One was low density, buildings separated by grass and trees. Phase Two is high density, all types of companies, from startups to multinationals. You put them in a collective environment to interact, because you're seeing technologies converge. High density encourages open innovation."

Peter McKinnon also speaks of open innovation: "Our buildings' walls too often limit our conversations. We have to break those barriers to...expand our collaborations." Saskatoon, too, has an energetic Regional Economic Development Authority (SREDA). Some years ago, Saskatoon voted to help fund the Canadian Light Source synchrotron on the U of S campus. So did Saskatchewan. Local and provincial support clinched the deal. Associated activity has now reached the point where Saska-

toon calls itself Science City. Total U of S research revenue grew 40 per cent to \$150.6 million in 2006-07.

Innovation Place, established adjacent to the University of Saskatchewan in 1980, claims to be "one of the most successful university-related research parks in North America." Companies – among them the large Bio Processing Centre – rely on the university's strengths in agriculture, information technology, environmental science, and life sciences. A visible symbol of the province's technological growth, Innovation Place now has 3,000 people working for 150 client groups.

The synchrotron and the nearly completed \$140 million International Vaccine Centre sit opposite Innovation Place. "Proximity is important," MacKinnon reminds us. Stressing proximity seems paradoxical in the electronic age. But proximity delivers "open innovation," promising synergies that give rise to unpredictable and unanticipated benefits. Edmonton and Saskatoon demonstrate a multi-meshed academic, civic and industrial spirit of collaboration – and continuing growth.

Those successes bring to mind a parcel of former industrial land in the centre of Vancouver that now houses the Great Northern Way Campus. GNWC combines elements of the University of British Columbia, Simon Fraser University, the Emily Carr Institute of Art and Design and the British Columbia Institute of Technology. As well as academic and research facilities, GNWC will include residential and retail space. The partners have successfully commercialized research, creating nearly 200 spin-off companies and attracting others,

injecting over \$560 million into B.C.'s economy.

Across Georgia Strait, the University of Victoria's Vancouver Island Technology Park (VITP) offers its own brand of open innovation. Fuel cell companies cohabit with companies in wireless, software, new media, life sciences, biotech, ocean technologies, ICT, pharmaceutical labs – and venture capitalists.

The term "economies of agglomeration" describes advantages companies derive by locating near each other. Those advantages still obtain. In Toronto, Mike Williams cites the example of an "American stem cell organization" seeking contacts at MaRS. On two days' notice the visitors met six out of seven top Canadian stem cell researchers. They took no taxis, walking to all their meetings.

"When we bring in an international contingent, we can get the right people for them." That may sound like MaRS receiving a delegation, but the speaker is Rose Fitzpatrick, marketing manager for PEI BioAlliance Inc. in Charlottetown. Innovation cluster growth does not need a major city, just focused goals and collaboration. "Because we're small we can access key people. It works because industry, federal and provincial governments and our academic institutions have committed to work together." Adding financial institutions defines BioAlliance, representing 25 bioscience companies – the number is growing – with nearly 800 employees. Executive Director Rory Francis finds BioAlliance "taking the province in new directions, growing businesses and sustaining communities." Deputy Minister of Innovation Michael Mayne adds: "In the

past, governments relied on tax measures and incentives to induce growth." Now, he suggests, intangibles such as quality of life and culture attract "the highly skilled individuals that are the source of research excellence and business innovation."

The University of Toronto's Richard Florida calls those "highly skilled individuals" the "creative class." Someone in Ottawa has been studying such people in community prosperity models. In late August the federal government announced a new immigrant category: the Canadian Experience Class would let foreign graduates of Canadian universities establish residence in Canada without returning to their home countries. Where will these skilled individuals settle? Richard Florida has an answer: they will go to regions which upgrade quality of life "intangibles" – transit, daycare and infrastructure – while offering mentoring and open innovation.

The Ottawa Centre for Research and Innovation has been growing steadily, its 600 members moving forward under OCRI's stated vision: "To make Ottawa recognized as one of the most innovative cities worldwide."

Jeffrey Dale, OCRI's CEO, comments: "We're seeing a proliferation of start-ups. The small and medium-sized enterprise space has doubled in ten years." He also sees "small companies going global right away." Canada's small domestic market needs innovative companies to compete internationally. But first they must be equipped. Michelle Scarborough, OCRI's VP. Investment and Commercialization, notes the importance of introducing early-stage companies to mentors and finance to prepare them for com-

petition in the larger world. "These needs are much better understood now," Scarborough adds. Mentoring and finance are significant factors on OCRI's menu of supports.

A new project is taking shape on Montreal's South Shore. Economic Development Canada is working with Montreal International and the Longueuil Agglomeration-Boucherville, Brossard, Saint-Bruno-de-Montarville and Saint-Lambert as well as Longueuil and three boroughs – to introduce "solid, strategic resources in innovation." Jacques Spencer, of Développement économique Longueuil (DEL), explains: "Since companies are usually not familiar with the R&D done at universities or research centres, DEL and the University of Sherbrooke have teamed in a partnership aimed at creating ties between businesses and universities, while encouraging SMEs to do business with the universities."

DEL and the University of Sherbrooke have become effective facilitators, visiting companies to describe the work of researchers at "top-notch local research establishments" who could help move business projects forward. At the same time, the partners keep companies abreast of available funding programs. Since April they have paired companies in biofood, energy, aerospace and chemical sectors with university-based researchers.

On the evidence, Mike Williams' recipe for success – the business community, municipality, post-secondary education community, and the major regional infrastructure – is beginning to catch on in Canada's most innovative communities.