

***Association of
University
Research Parks
Canada***

May 2013

National economic
impact study

Executive summary

Background

University research and technology parks have become a key element in the infrastructure that supports the knowledge based economy and Canada's innovation agenda. University research and technology parks provide a location in which researchers and companies operate in close proximity, which creates an environment of collaboration and innovation, promoting the development, transformation and commercialization of technology and knowledge-based innovation.

The Association of University Research Parks Canada ("AURP Canada") represents 28 existing and planned research and technology parks across the country, with a mandate to build awareness of the importance of university research and technology parks with stakeholders across government, academia and industry to more broadly advance the science and technology movement in Canada. Economic impact estimates associated with the operations and capital expenditures of companies located in the parks will be used by AURP Canada to help develop and reinforce its strategy for identifying sustainable development opportunities.

Study objectives

AURP Canada retained PwC to quantitatively assess and estimate economic impacts of university research and technology parks in Canada and to qualitatively assess other benefits and impacts. This study focuses on the economic impacts of research and technology parks which result from the operating and capital expenditures undertaken by companies located in these parks. Our mandate did not include an assessment of the economic benefits of the actual research conducted in the research and technology parks. These latter economic benefits could be a significant contribution to the productivity and growth of the Canadian economy beyond those estimated in this study.

To estimate the economic benefits as defined in this study, data was collected directly from university research and technology parks and through a company survey. Data and information was also collected to provide profile information about companies located in the parks. More specifically, our mandate was to:

- Provide a description/profile of the types of companies located in university research and technology parks.
- Assess and estimate the economic impact of university research and technology parks in Canada on a national and regional basis, and on a facilitative and attributable basis. In this context, the term "facilitative" refers to the total economic impacts associated with the companies and other organizations resident within the parks, while the term "attributable" refers to that portion of the facilitative impacts that directly result from the existence of the parks (more detail is provided in the main report regarding the distinction between facilitative and attributable economic impacts).
- Project the likely future economic impacts associated with university research and technology parks in Canada, once they have been fully built out and occupied according to the Master Plan for each park.
- Qualitatively assess other benefits and emerging trends associated with university research and technology parks.

Overview of our approach

Our overall study approach is briefly summarized below:

- A company survey was developed in conjunction with input and feedback from AURP Canada. The primary objective of the survey was to obtain data and information to assess economic impacts of research and technology parks on a facilitative and attributable basis. This data was also obtained to assess some emerging

trends in research and technology parks in Canada. Financial and other data obtained from the survey was checked for reasonableness, but we did not validate or audit the information received.

- An economic impact model was developed using the financial data obtained from the survey and Statistics Canada Input-Output Tables. Economic impacts were then extrapolated to the wider population of companies located in university research and technology parks in Canada on a regional basis. Extrapolated economic impact estimates are indicative only as the level of survey participation was limited.
- An econometric model was developed to assess what proportion of the economic impact facilitated by university research and technology parks was attributable to the existence of university research and technology parks using data obtained from the survey.
- Future economic impacts were projected using data obtained from research and technology parks administrators and manager regarding the future size and scope of each research and technology park in Canada.

What are university research and technology parks?

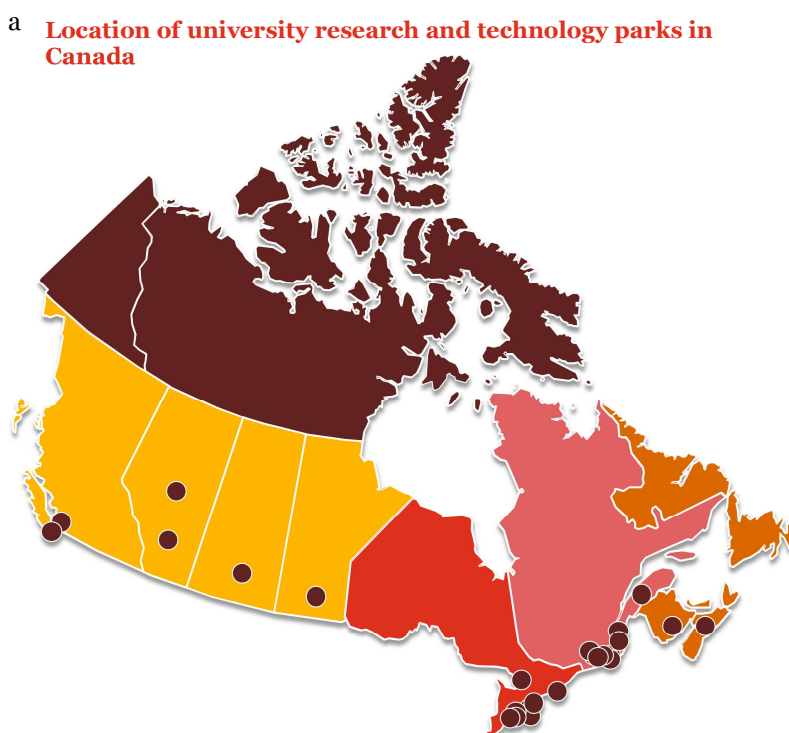
University research and technology parks provide a common location for collaboration between and across government, academia and industry, supporting the entire innovation ecosystem – from the inception of ideas to commercialization. Some of the services offered by university research and technology parks to tenants include:

- Access to financing by connecting companies to funding sources;
- Industry and university relationship building;
- Technology transfer and commercialization services;
- Use of pilot and demonstration facilities; and
- Other tenant support services including marketing, mentorships, human resource matching, business planning, workforce training, legal, accounting and tax services.

Research and technology parks in Canada

Research and technology parks have national presence and vary considerably in size and scope. The figure at right shows the approximate location of each of the 28 planned and existing research and technology parks in Canada.

There is a research and technology park in nearly every province and one in close proximity to the majority of urban centres across Canada. A significant number of research and technology parks are clustered in Southern Ontario and in and around the Montreal-Quebec City area. Including planned parks, 12 and 7 research and technology parks are located in Quebec and Ontario respectively. Western Canada accounts for 7 research and technology parks and 2 are located in Atlantic Canada.



Economic impact of research and technology parks in Canada

Research and technology parks are an important part of the infrastructure in Canada that supports our knowledge based economy. Ultimately, research and technology parks help generate more and bigger companies that create jobs, economic growth (as measured by Gross Domestic product or “GDP”) and tax revenues for all levels of government. The table below shows the current and future total economic impact of university research and technology parks on a facilitative and attributable basis.

Economic impact of university research and technology parks in Canada

	Spending (\$ millions)	GDP (\$ millions)	Wages and salaries (\$ millions)	Employment (Number of jobs)	Government tax revenues (\$ millions)
Facilitative economic impacts					
Current	\$6,059	\$4,305	\$3,209	65,187	\$596
Future (upon completion)	\$9,122	\$6,443	\$4,828	99,599	\$903
Attributable economic impacts					
Current	\$1,515	\$1,062	\$793	16,560	\$148
Future (upon completion)	\$2,378	\$1,663	\$1,248	26,821	\$235

The economic impact of research and technology parks is significant. The parks are estimated to facilitate approximately \$6.1 billion in annual spending across the Canadian economy. This generates roughly \$4.3 billion in GDP, of which \$3.2 billion are wages and salaries. Research and technology parks facilitate about 65,000 jobs across the Canadian economy and help generate \$596 million in government tax revenues. These facilitated impacts are expected to grow significantly as the parks move towards completion of their development phase as set out in each of the research and technology park Master Plans. Once fully operational and built out, operating and capital expenditures from companies located in research and technology parks are expected to generate \$9.1 billion annually in gross spending impacts throughout the Canadian economy. This is expected to generate a GDP impact of \$6.4 billion and facilitate the maintenance or creation of about 100,000 jobs across the Canadian economy.

Research and technology parks play a key role in generating these economic impacts. Based on our analysis, approximately 25% of the facilitative impact is estimated to be directly attributable to the existence of the parks. On this basis, university research and technology parks currently directly contribute about \$1,062 million to Canada’s GDP and support almost 17,000 jobs. The number of jobs that are directly attributable to research and technology parks is expected to grow to 27,000 based on research and technology park expansion plans.

Benefits of university research and technology parks in Canada

In addition to these economic impacts, our research indicated that companies located in Canadian university research and technology parks:

- **Generate highly skilled jobs** – 33% of companies report that over half of employees hold an advanced degree (Masters, PhD);
- **Are headquartered in Canada** – 71% of companies in research and technology parks in Canada have their headquarters in these parks;

- **Tend to be export-oriented** – 49% actively or occasionally export;
- **Have an enhanced ability to attract highly skilled labour** – 72% believe that locating in a university research and technology park improves their ability to attract and retain highly skilled labour;
- **Have an enhanced ability to invest in research and development** – 42% report that being in a university research and technology park will allow them to do more R&D over the next five years; and
- **Are growing at home** – 45% plan to expand by adding new locations, 45% of which are planned for the company's home province and another 21% in Canada, outside their home province.

Summary

This study has shown that university research and technology parks currently generate significant economic impacts for Canada and that this economic contribution is expected to grow significantly based on the expansion plans of the parks. It should be noted that the economic impact approach used for this study focused on estimating only those economic impacts that are a result of expenditures undertaken by companies located in university research and technology parks. Our mandate did not include estimating additional productivity benefits generated as a result of R&D and innovation undertaken by these companies. In this regard, economic impact estimates can be considered conservative.

Research and technology parks are a significant part of the research and innovation infrastructure in Canada. They play an important role in facilitating linkages across the innovation ecosystem by bridging the gap between incubation and commercialization and bringing together industry, government and academia. In doing so, they help accelerate the commercialization process and facilitate the growth and development of more and bigger companies in Canada's knowledge economy, thereby fueling collaboration, innovation and Canada's long-term prosperity.