

Survey On
Strategic Priorities For Research
And Related Infrastructure In Canada

Questionnaire For Industry

Purpose

The Partnership Group For Science And Engineering (PAGSE) is a cooperative association of twenty-four major Canadian science and engineering societies and associations. PAGSE works to ensure that Canada's research and development capacity is developed to its full potential for maximum economic and social benefit to Canada.

PAGSE has commissioned a survey of selected research-intensive universities, industry sectors and research intensive federal departments and agencies, to obtain their views on research and infrastructure priorities. The findings will contribute to the subsequent development of an action plan by PAGSE, to selectively increase Canada's commitment to research and innovation.

The Questionnaire

The survey provides an opportunity for industry to express its views on important complementary technology, research, research infrastructure, and skills needs, that will underpin its future competitive position.

Completed questionnaires will not be distributed or published. Nevertheless, any information about your company that is commercially confidential should not be included in your responses to the questions.

**Please complete the questionnaire by September 2, 1999 and fax to:
Secor (613) 569-1802.**

Questions?

If you require assistance in completing this questionnaire, or have any questions regarding this survey, please contact Dr. David Griller at Secor in Ottawa, at (613) 230-9240, or by e-mail at dgriller@secorottawa.com.

Please complete this section.

Name Of Your Company

Please indicate the name of the person to be contacted, should we have questions about the responses.

Name	Title
Telephone Number	Fax Number
E-mail	

Strategic Priorities For Research And Related Infrastructure In Canada

1. What specific technologies does your firm consider to be strategic for its competitive advantage within the three time frames indicated? (please complete the parts that are relevant on pages 1 through 3).

Time Frame	Core Technologies (those needed to obtain continuous quality, functionality and cost improvements to existing products and processes, e.g. computer-based technologies to shorten the product development and production cycle)
in the next 2 years
in 2 to 5 years
in 5 to 10 years

Time Frame	Growth Technologies (those needed to develop new products, processes and services, e.g. application-specific integrated circuits for new consumer products)
in the next 2 years
in 2 to 5 years
in 5 to 10 years

Time Frame	Breakthrough Technologies (innovation that changes the basis of competition and would put your firm well ahead of others e.g. development of effective genetic therapies)
in the next 2 years
in 2 to 5 years
in 5 to 10 years

2. What is the nature of the R & D that your firm will need to undertake or acquire from elsewhere in each of the three time frames, to underpin and support the development of the technological capabilities identified in question 1? (Please complete pages 4 through 6).

For Core Technologies

<p>in the next 2 years</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>in 2 to 5 years</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>in 5 to 10 years</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

For Growth Technologies

in the next 2 years
in 2 to 5 years
in 5 to 10 years

For Breakthrough Technologies

in the next 2 years
in 2 to 5 years
in 5 to 10 years

3. Of the R & D areas identified in question 2, which:

- ♦ are already the subject of a strong research base in the university system?

- ♦ should be the subject of additional investments in university research?

4. Please identify the specific technologies that could assist in transforming your entire industry sector to achieve a higher level of performance and international competitive advantage (e.g. more advanced programming tools and operating systems to remove software development bottlenecks).

in the next 2 years

in 2 to 5 years

in 5 to 10 years

5. For which, if any, of the technologies identified in question 4, should investments in university research be increased?

6. What major pieces of research infrastructure (eg. equipment and related facilities) should be put in place over the next five years in order to support university research and training needs, as well as serve the anticipated requirements of your company and/or industry sector?

	In the next 2 years	In 2 to 5 years
Your Company	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
Your Industry Sector	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

7. What is Canada's current overall competitive position in relation to competitor countries, in your industry? For each criterion, please check the appropriate box.

Criteria

- ♦ the level of scientific excellence

♦ the level of absorb research products and technological capability

♦ the industrial receptor capability
- ♦ the ability to improve the quality of

♦ the ability to
- ♦ the level of scientific excellence

♦ the level of absorb research products and technological capability

♦ the industrial receptor capability

♦ the ability to improve the quality of
- ♦ the ability to

♦ the level of absorb research products and technological capability

♦ the industrial receptor capability

♦ the ability to improve the quality of

Canada leads
competitor
countries

Canada is at
overall parity
with
competitor
countries

Canada
lags competitor
countries applicable

No Don't Know

8. List the types of scientific and technical knowledge that university graduates will likely require in the future to meet the anticipated needs of your firm and your industry.

My Firm

in the next 2 years

in 2 to 5 years

My Industry

in the next 2 years

in 2 to 5 years

9. What are the potential constraints on your industry developing and exploiting the future generations of **technological capabilities** needed to maintain an internationally competitive position?
(check a maximum of five choices)

- ; social/ethical acceptability of the technology or its applications
- ; commercialization likely to prove technically and/or financially risky
- ; lack of business models for profitable commercialization
- ; lack of adequate regulatory policies or standards
- ; lack of appropriate government policies
- ; lack of adequate industry investment in R&D
- ; lack of strong strategic linkages among firms and/or research collaboration between firms and research institutions
- ; lack of critical mass of industry/university/government expertise
- ; lack of private sector technology receptor capability
- ; lack of mechanisms to exploit the research for the general public good
- ; inadequate research capabilities in the university system to support industry
- ; shortages of highly qualified personnel
- ; other constraints (please specify)

10. What are the most likely impacts on Canada if the needed technological capabilities and research infrastructure are not put in place to support your industry sector? (check a maximum of five choices)

- ; the advancement of knowledge important for Canada will be adversely affected
- ; the education and training of highly qualified personnel will be adversely affected
- ; a few firms will lose competitive advantage
- ; an industry sub-sector will lose competitive advantage
- ; the opportunity to build a new industry sub-sector will not be realized
- ; the growth of regional and/or local economies will suffer
- ; an existing industry sector will become uncompetitive and lose substantial markets
- ; the opportunity to build a new industrial sector will be threatened
- ; sustainable development or health benefits on a limited scale will not be realized
- ; widespread sustainable development or health benefits will not be realized
- ; a significant portion of the population will miss out on social benefits
- ; government will not be in a position to formulate/implement policy or regulations
- ; other impacts (please specify)

