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# Impacts of Free Trade on R&D Services in Canada

**A survey of contract research organizations on the  
impacts of NAFTA and the implications of similar  
commitments under the World Trade Organization's  
General Agreement on Trade in Services**

Prepared by:

**Kevin Wennekes|  
VP, Research  
CATAAlliance**

**October 2005**

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IndustryU5150-059301/001/CY*

*Aussi disponible en français sur demande*



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# Executive Summary

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Having experienced over 10 years of open trade in R&D contract research services under the North-American Free Trade Agreement (NAFTA) with little-to-no noticeable, adverse impacts, Canada is considering making similar commitments under the General Agreement on Trade in Services (GATS) of the World Trade Organization (WTO).

Given the relatively little research conducted on the impacts of NAFTA on Canadian R&D providers, Industry Canada approached the Canadian Advanced Technology Alliance (CATAAlliance) to conduct a short survey of its members and extensive networks in the hopes of reaching out to this diverse and decentralized group of "paid for" research providers. The intent of the survey was to find out how Contract Research Organizations (CRO) have benefited or been impacted by trade in R&D services under NAFTA and gain their insights into how they believe they might benefit or be impacted by similar opportunities under the WTO's GATS.

The survey was conducted over a four-week period during the May-June period and resulted in 43 responses: cautiously accepted as being a successful response from a group of providers believed to be only numbering in the low hundreds as determined by other third-party research.

The following provides a high level overview of the results:

- The majority of respondents (71%) hailed from the Ontario region
- Commercial research providers were prevalent (73%)
- Majority provided services in ICT/E-Commerce and Scientific R&D
- Most organizations:
  - employ fewer than 10 full-time employees
  - realize an annual gross revenue of lower than \$10 Million
  - conduct the majority of their research for Canadian clients
  - are not conducting significant amounts of research for a Parent or Associated firm
- The United States was the top-ranked market overall for Canadian research firms, followed a distant second by the Rest of the European Union and third by the United Kingdom



- In most cases, firms who sold other science-related services to support their research found these critically important to their bottom line – representing anywhere from 10 to 50 per cent of annual gross
- While 41% of respondents indicated being adversely impacted by U.S. competition, the vast majority identified the competition as bearing little-to-no difficulty in their ability to compete
- Almost 4/5 of respondents did not feel that it would cause them problems if Canada were to guarantee the same level of access to its R&D services market for its WTO partners as it does for its NAFTA partners

While some barriers to trade were identified, i.e. increased security requirements in the U.S., Intellectual Property (IP) protection, and technology transfer agreements, the majority of respondents clearly feel they, as Canadian providers, offer a superior service, access to the best technologies and expertise, stable business environment, and attractive cost savings in enough proportion to stand their own ground in an expanded global environment.

## Conclusions

While little research has been done to quantify the impacts of NAFTA on commercial R&D research, based upon the findings of this study, Canadian R&D services providers do not feel that a GATS commitment reflecting a “NAFTA” level of access to the Canadian R&D services market would be detrimental to their ability to compete. Rather, Canadian firms are confident in their ability to compete and provide superior services in this sector.

In fact, it would appear as though most Canadian providers are open to, if not eager for, increased access to new markets and partnership opportunities; even at the risk of greater competition for domestic contracts.

It should be noted, however, that a decision by Canada to expand its commitments in R&D Services in the GATS will not guarantee increased access for Canadian service providers to new markets. Reciprocity is not assured, yet a Canadian offer in R&D Services could be used strategically in convincing other Members to do the same, resulting in increased access for Canadian service providers.

Before future surveys are conducted with this community, a comprehensive sectoral study should be completed to help identify and define the organizations that exist therein, as current, detailed information on Canadian CROs is not readily available.

Future research on this particular matter should be geared to include non-traditional research organizations, including government and non-profit facilities and Universities/Colleges, as there is growing evidence that these organizations are being

more often looked at to provide this type of research where their specialization is required. While anecdotal in nature, there is evidence to suggest that R&D contract work is being done by the above organizations but the nature of the relationship between the parties involved, the inseparability of "paid for" R&D data from other activities, and the complexity of R&D contract work could prove to make it difficult to effectively assess.



# Résumé

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Fort de plus de dix ans d'expérience de libre-échange dans le domaine des services de R-D à contrat dans le cadre de l'Accord de libre-échange nord-américain (ALENA), n'ayant donné lieu à guère de répercussions nuisibles voire à aucune conséquence visible, le Canada envisage de prendre des engagements similaires aux termes de l'Accord général sur le commerce des services (AGCS) de l'Organisation mondiale du commerce (OMC).

Vu qu'ont été effectués relativement peu de travaux de recherche sur les répercussions de l'ALENA sur les fournisseurs de R-D canadiens, Industrie Canada a confié à l'Alliance canadienne des technologies avancées (Alliance CATA) le mandat de mener une brève enquête auprès de ses membres et de ses vastes réseaux dans l'espoir de tendre la main à ce groupe divers et décentralisé de fournisseurs de services de recherche « payés ». L'enquête avait pour objet de déterminer comment les organismes de recherche à contrat (ORC) profitent ou souffrent du commerce des services de R-D dans le cadre de l'ALENA et d'obtenir leur avis sur la façon dont ils pourraient tirer profit des possibilités similaires offertes par l'AGCS de l'OMC ou être touchés par cet accord.

Nous avons mené l'enquête sur une période de quatre semaines, entre mai et juin, et obtenu 43 réponses. Nous estimons, avec prudence, qu'il s'agit là d'un bon taux de réponse, vu que le groupe de fournisseurs en question ne compterait que quelques centaines de membres, selon les recherches effectuées par des tiers.

Voici un aperçu global des résultats :

- La majorité des répondants (71 %) proviennent de la région de l'Ontario.
- Les fournisseurs de recherche commerciale dominent l'échantillon (73 %).
- La majorité offre des services de R-D dans les domaines des TIC/du commerce électronique et scientifique.
- La plupart des organismes :
  - emploient moins que 10 employés à temps plein;
  - réalisent un chiffre d'affaires annuel brut inférieur à 10 millions \$;
  - effectuent la majeure partie de leurs travaux de recherche pour des clients canadiens;
  - effectuent peu de recherche pour une société mère ou associée.

- Pour les entreprises de recherche canadiennes, les États-Unis demeurent le premier marché, globalement, suivis de loin par le reste de l'Union européenne et le Royaume-Uni.
- Dans la plupart des cas, les entreprises qui vendent d'autres services liés aux sciences pour soutenir leur recherche estiment qu'ils sont très importants pour leur rentabilité – représentant entre 10 et 50 p. 100 du chiffre d'affaires annuel brut.
- Même si 41 p. 100 des répondants affirment qu'ils souffrent de la concurrence des États-Unis, la vaste majorité sont néanmoins d'avis que la compétition ne nuit guère, voire ne nuit aucunement, à leur capacité de rivaliser avec leurs concurrents.
- Près de 4/5 des répondants estiment que le Canada ne leur causerait pas de problème en garantissant à ses partenaires de l'OMC le même niveau d'accès aux services de R-D que celui qu'il accorde à ses partenaires de l'ALENA.

Même s'ils ont fait état de l'existence d'obstacles au commerce, c.-à-d. l'accroissement des exigences en matière de sécurité aux États-Unis, la protection de la propriété intellectuelle (PI) et les accords de transfert de technologie, la majorité des répondants sont clairement d'avis que, en tant que fournisseurs canadiens, ils offrent un service supérieur, l'accès à une meilleure expertise et à de meilleures technologies, un cadre d'affaires stable et des économies suffisamment attirantes et importantes pour tirer leur épingle du jeu à l'ère de l'intensification de la mondialisation.

## Conclusion

Bien que n'aient été effectués guère de travaux de recherche visant à quantifier les répercussions de l'ALENA sur les services de R-D commerciaux, en se basant sur les constatations de la présente étude, les fournisseurs de services de R-D canadiens estiment que la prise d'un engagement dans le cadre de l'AGCS, correspondant au niveau d'accès qu'accorde l'« ALENA » au marché canadien des services de R-D, ne nuirait pas à leur capacité de rivaliser avec la concurrence. En fait, les entreprises canadiennes sont persuadées qu'elles peuvent affronter la concurrence et offrir des services supérieurs dans ce secteur.

Il semble que la plupart des fournisseurs canadiens sont favorables, ou ont voire même hâte, à l'élargissement de l'accès à de nouveaux marchés et à l'augmentation des possibilités de partenariat, même s'ils risquent de devoir faire face à l'intensification de la concurrence pour l'obtention de contrats au pays.



Il convient de noter, toutefois, que la décision du Canada d'étendre ses engagements aux services de R-D dans le cadre de l'AGCS ne garantira pas un accès accru à de nouveaux marchés pour les fournisseurs de services canadiens. La réciprocité n'est pas assurée. Cependant, le Canada pourrait utiliser stratégiquement son offre (services de R-D) pour convaincre les autres membres de faire de même, ce qui accroîtrait l'accès dont bénéficient les fournisseurs de services canadiens.

Avant que soient menées d'autres enquêtes auprès de cette communauté, il conviendrait de réaliser une étude sectorielle exhaustive visant à déterminer et à définir les organismes qui font partie de ce secteur actuellement. Il n'est pas possible pour le moment d'obtenir facilement de l'information détaillée sur les ORC canadiens.

Les travaux de recherche futurs portant sur ce sujet particulier devraient être axés sur les organismes de recherche non traditionnels, dont les centres publics et sans but lucratif et les universités et les collèges, vu qu'on constate de plus en plus qu'on fait plus souvent appel à ces organismes pour effectuer ce type de recherche dans leur domaine de spécialité. Même s'ils sont de nature non scientifique, des faits portent à croire que ces organismes effectuent de la R-D à contrat. Il est toutefois difficile d'évaluer efficacement la situation, en raison de la nature des relations entre les parties concernées, de l'inséparabilité des données sur la R-D « payée » et des données sur les autres activités et de la complexité des travaux de R-D effectués à contrat.

# Introduction

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For the past decade, trade in R&D services has been almost fully open under NAFTA with only limited but key protections in place, such as not taking any commitments in public education services and committing not to do so in the future. With over 10 years of open and thriving trade in R&D services under NAFTA and no challenges or negative impacts on the education front, Canada is considering making similar commitments with respect to R&D services under the General Agreement on Trade in Services (GATS).

Under GATS, Canada has committed itself to granting market access and national treatment on cross-border trade, consumption abroad, and commercial presence in only one category - research and experimental development services on social sciences and humanities (including law and economics, except linguistics and language).

As there are protections afforded by GATS which are at least as good, if not better, than those in NAFTA, where a full commitment has been made with respect to trade in R&D services, it is expected that a comparable commitment could be made in the GATS in anticipation of achieving similar, positive results if other WTO Members follow Canada's lead by improving their own commitments in this sector.

To date, little to no research exists to offer proof on the true impacts and benefits of trade in R&D services under NAFTA. Nor has there been a consultation process to determine stakeholders' perceptions on the possible ramifications of a similar arrangement under GATS.

As such, Industry Canada asked *CATAAlliance* to conduct a short survey of our members and leadership networks in an attempt to reach Canadian providers of "paid for"<sup>1</sup> R&D services to find out: a) how respondents have benefited or been impacted by trade in R&D services under NAFTA; and, b) how they believe they might benefit or be impacted by similar opportunities under the World Trade Organization's General Agreement on Trade in Services.

The questionnaire was created to identify:

- how extensively Canada-based providers of "paid for" R&D sell their services to clients outside Canada;
- their own experiences under NAFTA;

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<sup>1</sup> The phrase "paid for" is shorthand for R&D services an organization provides that are paid for by outside clients.



- whether respondents think that creating greater access to international “paid for” R&D services through GATS at the WTO will increase overseas opportunities for Canada-based providers; and,
- whether respondents think that such access could result in greater competition in Canada (from the entry of new foreign providers) that would outweigh the overseas opportunities.

The results of this survey are provided to help decide positions that the Government of Canada will take in international trade negotiations at the World Trade Organization.

## Approach and Methodology

With a core project team consisting of Kevin Wennekes, VP Research, CATAAlliance, and from Industry Canada: Simon McInnes, Director, International Affairs, Policy Sector; Marie-Joséphine Nsengiyumva, Senior Economist, International and Intergovernmental Affairs Branch, the team met over the course of April/May 2005 to establish the project’s timelines, clarify respective roles and responsibilities regarding the distribution and communication strategies required to engage respondents, and obtain input on the survey’s content.

## Survey Development

In close consultation with the Project Team, a survey was created that:

- consisted of 13 closed-ended questions consisting of multiple-choice, ordinal and categorical types
- five open-ended questions allowing respondents to provide answers of their own devising
- provided an area where respondents could self-identify themselves in order to receive information, via e-mail, on the progress/outcomes of the Study’s recent initiatives
- provided a notice that the information in the survey was being collected under the authority of the Privacy Act and confidentiality was assured
- was offered in both French and English languages
- took approximately 10 minutes to complete

A copy of the final questions can be found in **Appendix A**.

The survey was officially launched on May 26 and closed on June 24, 2005.

## **Distribution & Communication Strategy**

To launch the survey, CATAAlliance delivered an e-mail notification, with reminder, to over 20,000 individuals in its networks, posted the announcement on its website's home page, and provided a link to the survey in the On-Going Survey Section as well. The notice sent to the CATA networks is attached in **Appendix B**.

In order to further ensure that as many potential respondents as possible were made aware of this study, and realizing that unsolicited surveys are rarely well-received, CATAAlliance team members directly contacted dozens of key stakeholder groups to establish partnerships towards generating the legitimacy and importance necessary and to encourage a healthy response rate. CATAAlliance also engaged with other associations recognized for their influence/reach in the R&D sector, many of whom are listed on this site: [http://strategis.ic.gc.ca/epic/internet/inrti-rti.nsf/en/h\\_te03500e.html](http://strategis.ic.gc.ca/epic/internet/inrti-rti.nsf/en/h_te03500e.html).

## **Confidentiality of Respondents**

Any personal information collected in the survey was disaggregated from the research findings. Respondents were invited to self-identify themselves for follow-up purposes but this information was not provided in conjunction with their individual submission nor are they revealed in this report.

## **Qualitative Study**

Due to a lack of existing research regarding the size and composition of the CRO population in Canada, it was not possible – given the short timelines and added funding needs to explore this – to conduct a controlled survey of this group. As such, quantitative study results such as response rates, non-response rates, margins of error, and refusal rates cannot be determined. The responses received to the survey could also include multiple submissions from a single firm, further impacting on the Demographic results.

## **About CATAAlliance**

The Canadian Advanced Technology Alliance (CATAAlliance) is Canada's leading, most influential and entrepreneurial technology alliance. It is committed to growing the global competitiveness of its members, 80% of which are currently active exporters. The common purpose that unites the membership is CATAAlliance's commitment to members' business growth. With offices across the country, we are focused on the provision of business services and government relations programs that conserve and



leverage member resources. Because members are action-oriented businesses, CATAAlliance responds with action when members need specific services or activities. The "Traditional Champion" of Canadian research and development, CATAAlliance's mission is to stimulate "Global Business Growth" through the forces of Canadian innovation and strategic partnership.

CATAAlliance was selected to perform this survey due to the organization's leading expertise in delivering timely, affordable surveying of leaders in every sector of Canada's knowledge-based economy. CATAAlliance is not an umbrella group for commercial R&D providers, but one that has members and leadership networks with very broad representation across all industry sectors. As the CRO industry is not represented by a national organization, and with no "directory" listings available of these types of firms, CATAAlliance was best equipped with the required talent, experience and reach to capture a significant enough response by the CRO community.

# Survey Results

The survey received a total of 43 responses. Of these 41 were completed in English and two were completed in French. These results should be considered rather successful in light of what is considered to be a relatively small group.

The 1998 Industry Canada paper *The Commercial Contract R&D Industry: a Snapshot*<sup>2</sup>, identifies approximately 116 Contract Research Organizations (CROs) in Canada – firms that specialize in contract research and those that derive 50% or more of their revenues from R&D contracts. While difficult to project this sector's actual growth and with no current data to draw from, it can be argued that this response is accurately representative of the community at large. (More on the CRO community can be found in an extract of the aforementioned report as provided in **Appendix D**.)

While caution should always be exercised when interpreting results from a sample to the population at large, the survey results obtained through this study would appear to offer reasonable support for the hypotheses and related conclusions outlined in this paper.

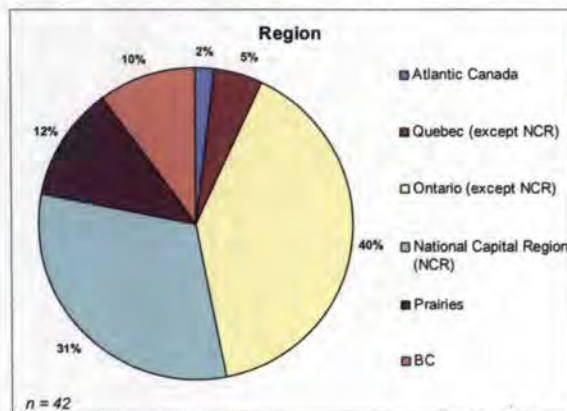


Figure 1

## Demographics

As demonstrated by the chart on the left, the majority of respondents (71%) hailed from Ontario, while Atlantic Canada and Quebec both suffer from a result of under-representation with only 1 and 2 respondents answering from these areas respectively.

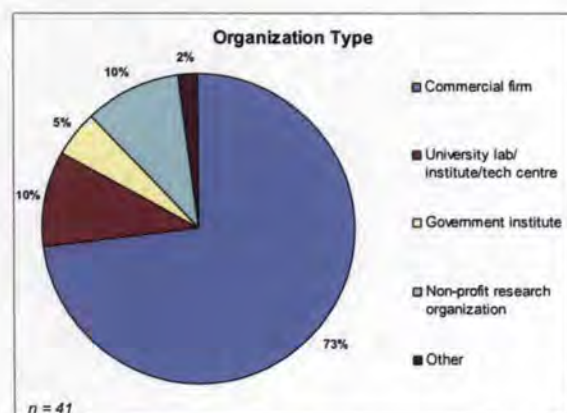


Figure 2

As expected, Commercial firm representation is highest overall as a result of the survey's specific request for participation by organizations providing "paid for" research. R&D contract work done by not-for profit, the public sector, and universities/colleges, while possibly representing a growing segment of the "paid-for" market, were not anticipated to provide a significant showing in this survey but were accommodated for given the

<sup>2</sup> Written by the Service Industries and Capital Projects Branch of Industry Canada. SICP worked in cooperation with and under the guidance of Statistics Canada in the extraction of the data from the "R&D in Canadian Industry Survey" administered by Statistics Canada.



wide net being cast to identify potential respondent groups.

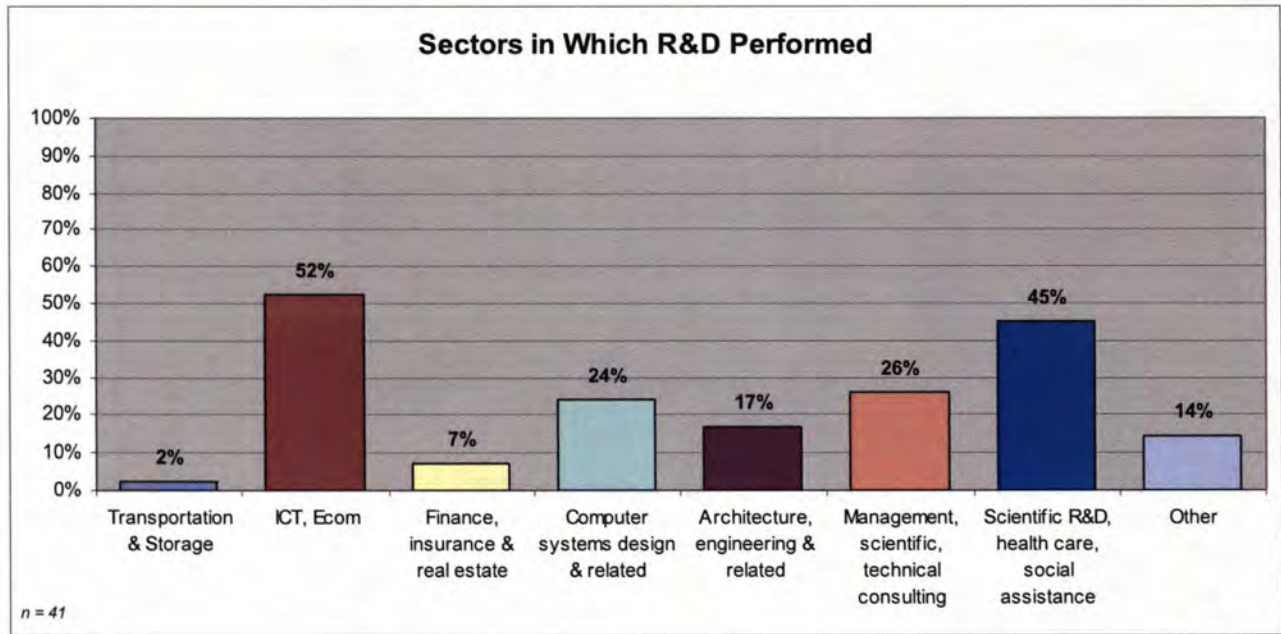


Figure 3

Respondents were asked to identify up to three sectors, as appropriate, in which they provide R&D Services. As demonstrated in the chart above, more than half the respondents identified having provided services to the Information, Communications, Telecommunications, Ecommerce sector and slightly less than half identified scientific research and development, health care and social assistance sectors as clients.

The table below provides a comprehensive breakdown of the responses.

Sector	Count	%
Information, Communications, Telecommunications, Ecommerce	22	52%
Scientific R&D, health care, social assistance	19	45%
Management, scientific, technical consulting	11	26%
Computer systems design & related	10	24%
Architecture, engineering & related	7	17%
Other	6	14%
Finance, insurance & real estate	3	7%
Transportation & Storage	1	2%

Table 1

Other responses included defence, geomatics, energy companies, market research, and software development.

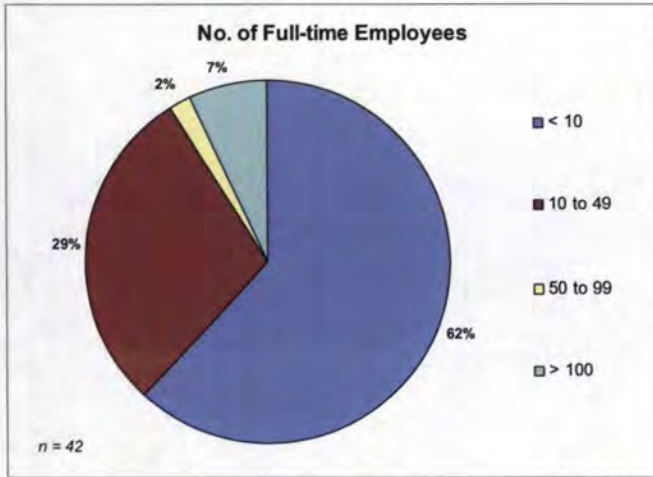


Figure 4

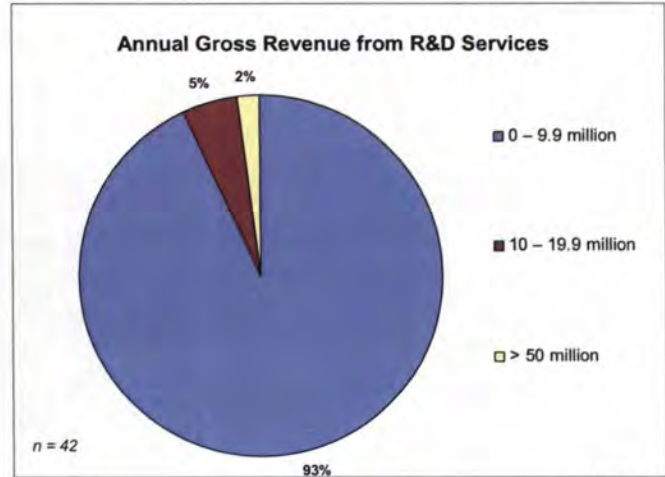


Figure 5

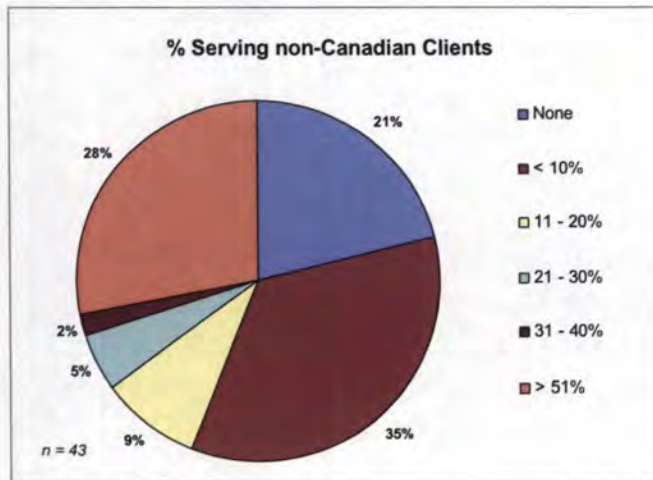


Figure 6

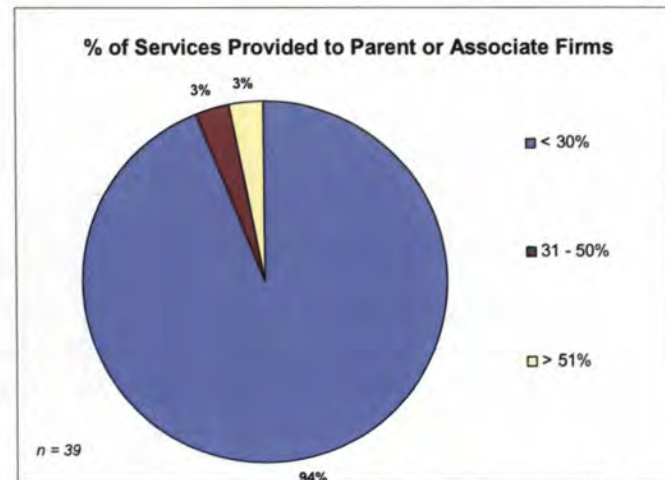


Figure 7

The above charts clearly demonstrate that the respondent group is composed primarily of small organizations hiring less than 10 full-time employees and realizing an annual gross of less than \$10 million in services.

The vast majority (56%) of firms are serving primarily Canadian clients with 90% or more of their business being provided in-Country and they are clearly driven by Canadian research needs with only minimal work being done for the Parent or Associated firm (6%).

As described in the chart (Figure 8) on the following page, when comparing the size of the firm using its number of employees against the per cent of work completed for Non-Canadian clients, it is revealed that the smaller firms are just as likely to have a strictly Canadian client base (31%) as it is to be serving a client base that is more than 50 per cent non-Canadian, while larger firms reveal a majority of their work is provided primarily for Canadian clients, as demonstrated by the relatively low percentages revealed here (11-20% non-Canadian clients most significant level recorded).



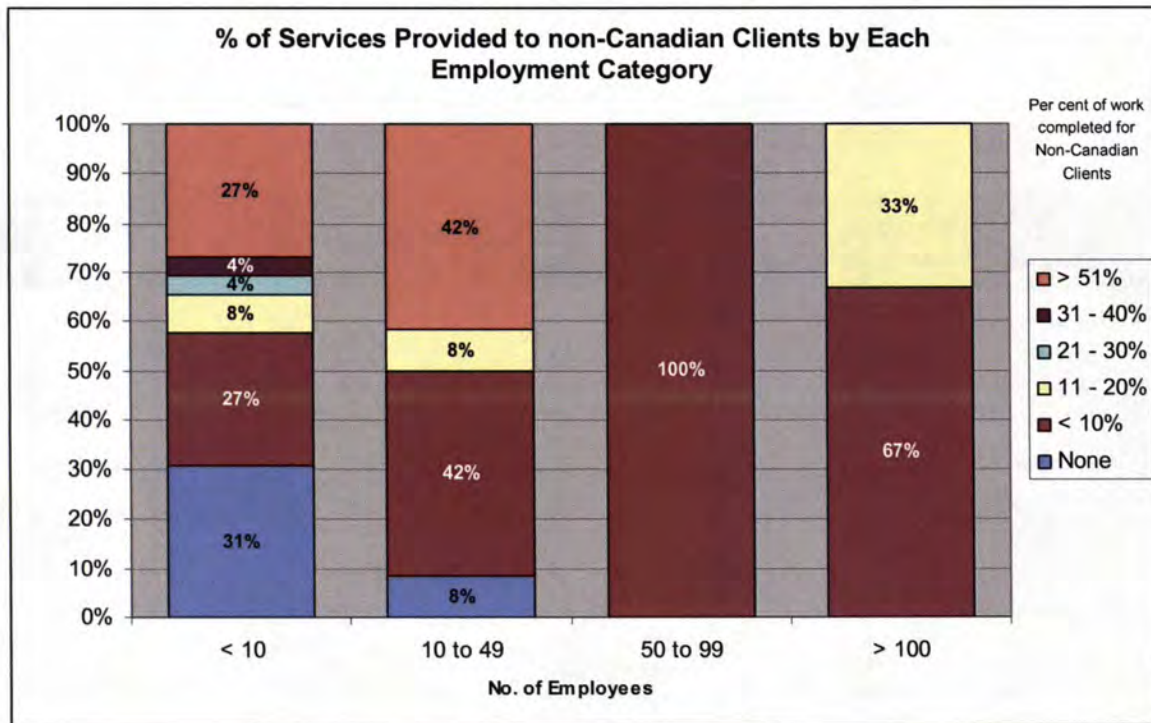


Figure 8

These results reflect the range and diversity of Canada's SME (small and medium sized enterprises) community in their capacity to deliver services to clients both at home and abroad and filling niche research needs that the larger firms would not be mandated to deliver.

	No. of Employees					
	< 10	10 to 49	50 to 99	> 100	Total	
	Sequence of numbers in a cell: Count Percent across the columns Percent down the rows					
% of work completed for Non-Canadian Clients	None	8 89%	1 11%	0 0%	0 0%	9 100%
	< 10%	31% 7 47%	8% 5 33%	0% 1 7%	0% 2 14%	- 15 100%
	11 - 20%	27% 2 50%	42% 1 25%	100% 0 0%	67% 1 25%	- 4 100%
	21 - 30%	8% 1 100%	8% 0 0%	0% 0 0%	33% 0 0%	- 1 100%
	31 - 40%	4% 1 100%	0% 0 0%	0% 0 0%	0% 0 0%	- 1 100%
	> 51%	27% 7 59%	42% 5 41%	0% 0 0%	0% 0 0%	- 12 100%
	Total	100% 26 -	100% 12 -	100% 1 -	100% 3 -	- 42 -
		100%	100%	100%	100%	-

Table 2

## Business Strategies

Survey respondents were asked to rank their three primary non-Canadian markets – these results are outlined in the table below.

Market	Top Ranked	Mid-Ranked	Bottom-Ranked
<b>USA – Top ranked</b>	<b>22</b> 67%	<b>1</b> 4%	<b>3</b> 16%
Mexico	1 3%	2 8%	0
<b>UK – Third ranked</b>	<b>1</b> 3%	<b>7</b> 27%	<b>1</b> 5%
<b>Rest of EU – Second ranked</b>	<b>2</b> 6%	<b>9</b> 35%	<b>5</b> 26%
Russia, former states of Soviet Union, and rest of Eastern Europe	1 3%	0	1 5%
Middle East and North Africa	1 3%	0	0
South Asia	1 3%	1 4%	1 5%
SE Asia	0	1 4%	1 5%
China / Hong Kong / Taiwan	0	2 8%	1 5%
Korea	0	0	2 11%
Japan	2 6%	2 8%	0
Australasia	0	0	3 16%
Central and South America	2 6%	0	1 5%
Sub-Saharan Africa	0	1 4%	0

Table 3

The United States was, not surprisingly, the top-ranked market for Canadian research firms, followed by a distant second and third by the Rest of the European Union and the United Kingdom respectively.

The remainder of the regions scored relatively low in the ranking, possibly a reflection of the cultural, linguistic, legal, and geopolitical barriers inherent in working in these parts of the world.

Respondents were then asked if they sold other science-related services that support their “paid for” R&D services. As reflected in the chart on the following page (Figure 9), an equal number of respondents (41%) indicated that they provide these services over those who do not.



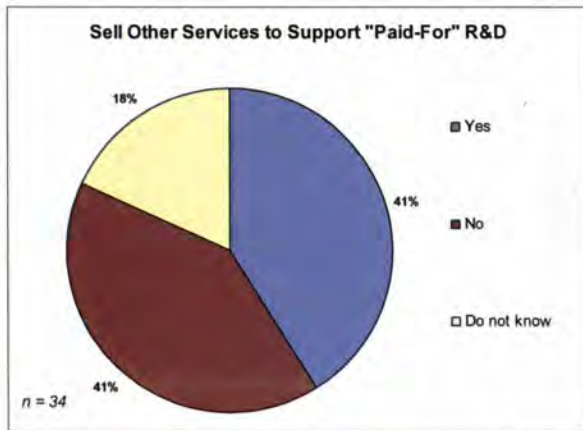


Figure 9

The subsequent question asked respondents to identify what these services were and how important a contribution they were. While the examples of the services provided varied in nature, the majority of respondents identified these services as being of moderate to significant importance to their organizations.

Some of the services provided included:

- Quality control/assurance services
- Custom software development
- Sale of licenses and hourly services for regular development
- Testing and certification of manufactured products
- Specialized training services

Respondents indicated that these services could account for anywhere from 10 to 50 per cent of gross revenues.

## Impact on Competitiveness

The survey asked respondents who sell services to the U.S. whether they were adversely impacted by U.S. competition. While a slight majority of respondents indicated that they were impacted (41%), if one can interpret the significantly high *Do not know* responses as meaning that competition may not be noticeable, then the impact could be minimal. In fact, the results of the follow-up question provide indicators that this could be the case.

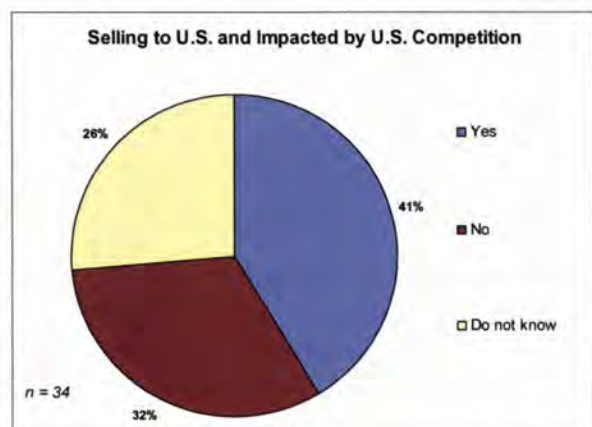


Figure 10



Figure 11

Of those who responded that they were selling to the U.S. and impacted by competition (a total of only 14 respondents) the survey then asked them to select the statement that best characterizes the majority of their experience regarding trade, regulatory, or other barriers. As demonstrated above, the clear majority (57%) of respondents indicated experiencing *little to no difficulty* as a result. This result, combined with those who indicate competition exists but has had little impact, brings this total to 71%.

When asked to elaborate, respondents provided the following observations:

- NAFTA has had no impact but the primary difference has always been the US/Can dollar.
- Providing a specialized area of expertise – niche marketing – provides competitive edge
- Canadian products/services inherently better than American ones but their use offers the path of least resistance.
- U.S is a major client and competition comes primarily from other Canadian company
- Doing research projects abroad can be challenging in overcoming confidentiality, legislative and funding matters – easier to engage in similar-type research projects here in Canada.



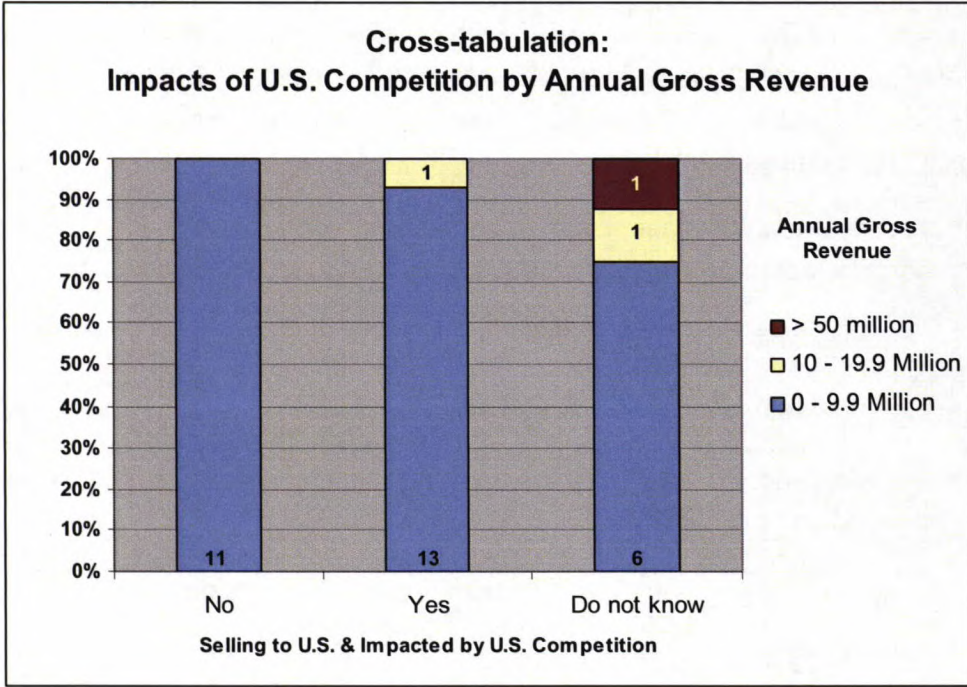


Figure 12

In further examining the issue of who was being impacted by U.S. Competition as detailed in **Figure 10**, these results were cross-tabulated with the respondent firm's annual gross revenue to produce the results demonstrated above. Not surprisingly, as most firms reported annual gross revenues of less than \$10 Million, an equal distribution of these firms across the results are realized. In the chart below, the results were tabulated by the firm's number of full-time employees and the results here demonstrate that firms with higher employee counts were more likely to be impacted by U.S. competition than those with a smaller workforce.

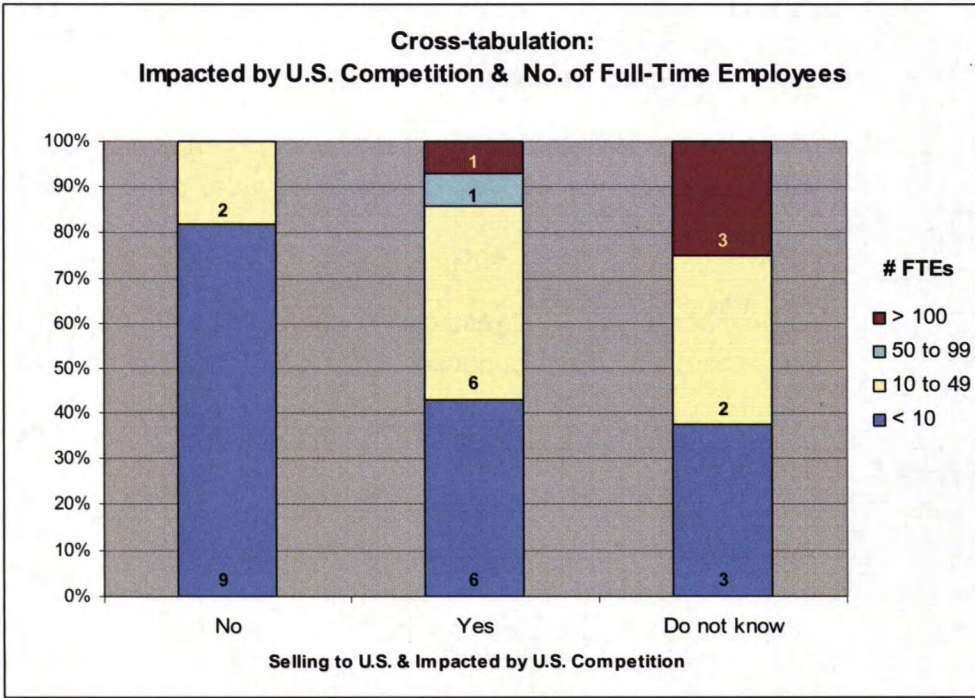


Figure 13



Respondents were then asked to consider their other primary non-Canadian markets and identify any barriers that might exist in selling their “paid for” R&D services in these specific regions. Most were not specific in their response to the region involved but some of the recurring themes included:

- Legislative challenges: information security, confidentiality, banking/ financial; program specific i.e. Galileo, ITARS
- IP ownership
- Security restrictions: heightened since 9/11
- Proving and providing credible and affordable services can be provided by a Canadian firm
- Lack of funds/resources to conduct effective business development
- Managing technology transfers
- Dealing with domestic differences: government, language

Following this, all respondents were asked an open-ended question probing if they were aware of any restrictions or regulations that exist in Canada that may prevent an R&D services provider from a foreign country (other than the U.S.) from providing its services here.

- Twenty-three respondents stated simply enough that they were not aware of any such barriers.
- The few issues raised include:
  - unavailability of Scientific Research and Experimental Development (SR&ED) credits for work done outside Canada;
  - highly-regulated area of encryption and IP protection as barriers;
  - political embargoes that restrict American companies with branches in Canada from bidding/conducting work in said regions; and,
  - SOX compliance should be transparent across the U.S./Canadian border.



Finally, respondents were asked if it would cause them problems if Canada were to guarantee the same level of access to its R&D services market for its WTO partners as it does for its NAFTA partners. As clearly demonstrated in the chart below, a clear majority of 78% of respondents indicated that they believed it would not be an issue.

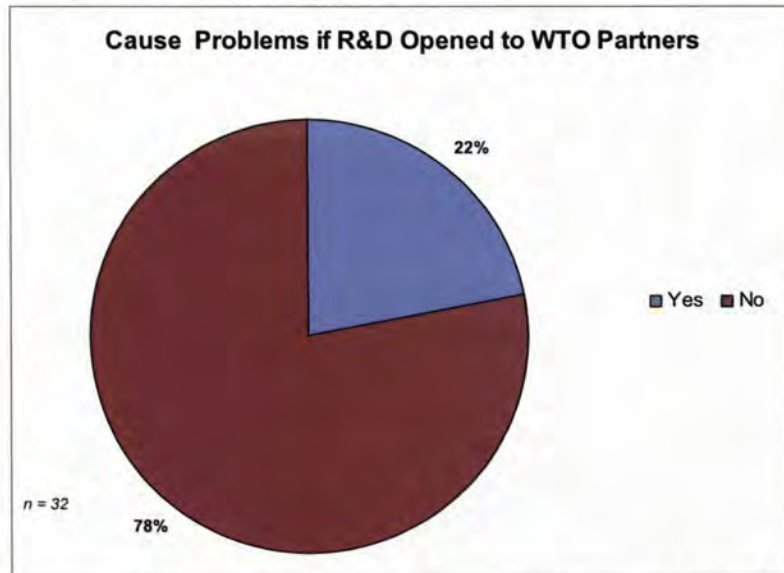


Figure 14

When asked to elaborate on their answer, the following themes could be identified:

- **Specialized Skills/Knowledge** – the services being provided by the firm are very specialized and little-to-no competition exists. Also R&D typically implies higher education, experience, innovation is required to conduct it – companies likely willing to pay more upfront to get it done right in Canada by Canadian firms
- **Canadian firms are tough competitors** – due very much in part to the previous theme, but also based upon the relayed tone and sense of confidence in the respondents' replies that they provide a unique, specialized and "world-calibre" service. Comments welcomed the opening up of trade as a means for expanding markets and creating new, international partnerships, rather than demonstrating significant concern that opportunities will shrink in the light of more competition
- **Potential Pitfalls**
  - the relatively small competitive market for R&D in Canada and introducing other players could reduce individual local markets and increase bureaucracy
  - Selection process should not be based upon geographical considerations

- Facing lower wages from technology workers in India and elsewhere in Asia
- Uncertainty of WTO's impact on our SR&ED system and on our education, etc. reservations
- Would expect reciprocity from other WTO members



## Conclusions

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While little supporting research has been done to quantify the impacts of NAFTA on commercial R&D research, based upon the findings in this report, other anecdotal evidence and the fact that little public backlash has been recorded on this subject in the past, it is relatively safe to assume that a similar experience can be expected with a similar GATS commitment.

There does not seem to be any indication that respondent firms have been adversely impacted by the NAFTA experience. With only minor cautions for continued transparency in the selection processes, potential impacts to SR&ED credits and the specter of possibility of losing more technical jobs to India and Asia, most believe that only positive outcomes can be realized by more open trade agreements.

Based upon respondent remarks, it would appear that the commercial research sector would welcome an extension of Canada's research and development services commitments in the GATS to be in line with what has already been undertaken in the NAFTA. Furthermore, they would be interested in capitalizing on the opening of other WTO Members' markets if those Members should reciprocate with equivalent commitments. Most respondents could almost be described as eager for the opportunity and feel the specialized skills, technical resources, superior products, and stable business, political and legislative frameworks Canada has in place well-positions Canadian firms to endure any added competition that could arise from extending Canada's Commitments in the GATS.

It should be noted, however, that a decision by Canada to expand its commitments in R&D Services under GATS will not guarantee increased access for Canadian service providers to new markets. It is Canada's decision alone to consider widening the scope of coverage in the R&D Services sector and other WTO Members may not necessarily reciprocate. Yet a Canadian offer in R&D Services could be used strategically in convincing other Members to do the same and any resulting commitments by other WTO Members would bring increased access for Canadian service providers. It is in this sense that the expansion of Canadian commitments in R&D Services has the potential to improve access for Canadian services providers to new markets.

Before embarking on future survey studies of this community, a comprehensive sectorial study should be completed to help identify and define the organizations that exist therein, as current, detailed information on Canadian CROs is not readily available. A study of this nature would then allow for more controlled surveys of this group and result in an ability to more accurately determine the validity and degree to which the results represent the community at large.

Future research initiatives on this subject matter might also want to more closely examine the anecdotal evidence indicating more "paid-for" research being conducted by

non-traditional sources such as non-profit technical associations, universities/colleges, and the public sector. This research need was similarly identified in the SICP paper and while there are great challenges in determining this data (identified as due, in large part, to: the nature of the of the relationships between the parties involved; the fact that data on R&D contract work are often mixed together with and inseparable from data on other activities; and, the complex and emerging nature of R&D contract work in some of these sectors) a more concentrated effort on engaging this respondent group should be pursued and the impacts on the industry further explored.



# Appendix A – Survey Questions

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French version follows.

## Preamble

CATA has been asked by Industry Canada to conduct a short survey on R&D services that you provide but are paid for by outside clients. *For the rest of this survey, we will use the phrase “paid for” as shorthand for R&D services you provide but are paid for by outside clients.*

**Please respond to this survey only if your organization conducts “paid for” R&D services (for cost and/or profit) for outside clients.**

The results of this survey will help decide positions that the Government of Canada will take in international trade negotiations at the World Trade Organization.

Your cooperation and time in completing this questionnaire is greatly appreciated.

The survey should take no more than 3 to 5 minutes to complete and is available anytime until **June 24, 2005**

1. Please select your preferred language to answer this survey.

**Note:** As this information is being collected under the authority of the Privacy Act, the government will only receive the final results of the study in the form of a report, which will contain non-identifying aggregate information. The government will receive the names of participants only in cases where respondents have provided their contact information in order to be kept informed on this initiative. Even in these cases, respondent names will not be linked to their responses.

2. Where are you located?
  - a. Atlantic Canada
  - b. Quebec (except NCR)
  - c. Ontario (except NCR)
  - d. National Capital Region (NCR)
  - e. Prairies

- f. BC
- g. Territories

3. What kind of organization/firm are you?

- a. Commercial firm
- b. University lab / institute / tech centre
- c. Government institute
- d. Non-profit research organization
- e. Other

4. In what sectors do you primarily provide "paid for" R&D services? Check up to three as appropriate.

- a. Transportation and storage
- b. Wholesale trade
- c. Retail trade
- d. Information, Communications, Telecommunications, Ecom
- e. Finance, insurance and real estate
- f. Computer systems design and related services
- g. Architecture, engineering and related services
- h. Management, scientific and technical consulting
- i. Scientific research and development, health care and social assistance
- j. Other \_\_\_\_\_

5. How many full-time-equivalent employees do you usually have working on "paid for" R&D services?

- a. < 10



- b. 10 - 49
  - c. 50 - 99
  - d. > 100
6. What is your organization's annual gross in "paid for" R&D services provided to your clients? All amounts below in Canadian dollars.
- a. 0 – 9.9 million
  - b. 10 – 19.9 million
  - c. 20 – 29.9 million
  - d. 30 – 39.9 million
  - e. 40 – 49.9 million
  - f. > 50 million
7. How much of your "paid for" R&D services are done on behalf of a parent or an associated firm owned by the parent firm?
- a. < 30%
  - b. 31 - 50%
  - c. > 51%
8. Approximately what percentage of your annual "paid for" R&D services gross is done for clients outside Canada?
- a. None
  - b. < 10%
  - c. 11 - 20%
  - d. 21 - 30%
  - e. 31 - 40%
  - f. 41 - 50%

g. > 51%

9. Rank your primary three non-Canadian markets.

- a. USA
- b. Mexico
- c. UK
- d. Rest of EU
- e. Russia, former states of Soviet Union, and rest of Eastern Europe
- f. Middle East and North Africa
- g. South Asia
- h. SE Asia
- i. China / Hong Kong / Taiwan
- j. Korea
- k. Japan
- l. Australasia
- m. Central and South America
- n. Sub-Saharan Africa

10. Does your organization sell other science-related services that support your “paid for” R&D services?

- a. Yes
- b. No
- c. Do not know

11. What are these and how important a contribution are they to your “paid for” R&D?



12. Has your organization provided R&D "paid for" services to clients in the USA and/or have been impacted by U.S. competition?
- a. Yes
  - b. No
  - c. Do not know
13. Which statement best characterizes the majority of your experience regarding trade, regulatory, or other barriers with the U.S.? Please explain.
- a. My firm/organization has experienced no/little difficulty in selling "paid for" R&D services to clients in the USA
  - b. U.S. competitors might have penetrated the Canadian market but they have not impacted my ability to sell "paid for" R&D services in Canada
  - c. U.S. competitors have penetrated the Canadian market and have impacted on my ability to sell "paid for" R&D services in Canada
14. Thinking about other primary non-Canadian markets, do you face any barriers to selling your "paid for" R&D services? [For instance, IP ownership, personnel mobility, etc.] Please specify the market in your response.
15. Are you aware of any restrictions or regulations that exist in Canada that may prevent an R&D services provider from a foreign country (other than the U.S.) from providing its services here? Please explain
16. Would it cause you problems if Canada were to guarantee the same level of access to its R&D services market for its WTO partners as it does for its NAFTA partners? Please explain.
- a. Yes
  - b. No
17. Would you like to be kept up-to-date on the progress and outcomes of this initiative? If so, please provide your name and e-mail below.

## French Survey

### Introduction

La CATA a été invitée par Industrie Canada à effectuer une brève enquête sur les services de R&D que vous fournissez à des clients externes contre paiement. Dans la présente enquête, nous utiliserons l'expression « services de R&D payés » pour désigner en abrégé les services de R&D que vous fournissez à des clients de l'extérieur contre paiement.

Veuillez participer à ce sondage seulement si votre organisation effectue des services de R&D payés « au prix coûtant ou à profit » pour des clients de l'extérieur.

Les résultats de cette enquête aideront le gouvernement du Canada à décider des positions qu'il adoptera dans les négociations commerciales internationales à l'Organisation mondiale du commerce.

Merci pour votre coopération et le temps que vous prendrez pour remplir ce questionnaire.

Ce sondage ne devrait pas prendre plus de 3-5 minutes à compléter et sera disponible jusqu'au le 24 juin 2005.

1. Veuillez sélectionner la langue dans laquelle vous désirez répondre à ce sondage.

Note : Ces renseignements étant recueillis en vertu de la Loi sur la protection des renseignements personnels, les résultats finaux de l'étude seront communiqués au gouvernement sous la forme d'un rapport contenant seulement des renseignements groupés qui ne permettront pas d'identifier les répondants. Seuls les noms des répondants ayant eux-mêmes fourni leurs renseignements personnels afin de rester informés au sujet de cette initiative seront dévoilés au gouvernement. Toutefois, dans ces cas, les noms des participants ne seront pas associés à leurs réponses.

2. Où êtes-vous situé?
  - a. Canada atlantique
  - b. Québec (sauf la RCN)
  - c. Ontario (sauf la RCN)
  - d. Région de la capitale nationale (RCN)



- e. Prairies
- f. C. B.
- g. Territoires

3. Quel genre d'organisation / d'entreprise êtes-vous?

- a. Entreprise commerciale
- b. Laboratoire universitaire / institut / centre technologique
- c. Institut gouvernemental
- d. Organisme de recherche sans but lucratif
- e. Autre

4. Dans quels secteurs fournissez-vous principalement des « services de R&D payés »? Cochez jusqu'à trois cases au besoin.

- a. Transport et entreposage
- b. Commerce de gros
- c. Commerce de détail
- d. Information, communications, télécommunications, cybercommerce
- e. Finances, assurances et immobilier
- f. Conception de systèmes informatiques et services connexes
- g. Architecture, génie et services connexes
- h. Gestion, conseils scientifiques et techniques
- i. Recherche scientifique et développement, soins de santé et aide sociale
- j. Autre

5. Combien d'employés à temps plein sont habituellement affectés aux « services de R&D payés »?
- a. < 10
  - b. 10 - 49
  - c. 50 - 99
  - d. > 100
6. Quel revenu brut annuel tirez-vous des « services de R&D payés » que vous fournissez à ces clients? Les montants ci-dessous sont exprimés en dollars canadiens.
- a. 0 – 9,9 millions
  - b. 10 – 19,9 millions
  - c. 20 – 29,9 millions
  - d. 30 – 39,9 millions
  - e. 40 – 49,9 millions
  - f. > 50 millions
7. Combien de « services de R&D payés » sont effectués au nom d'une société mère ou affiliée que possède la société mère?
- a. < 30 %
  - b. 31 - 50 %
  - c. > 51 %
8. Approximativement, quel pourcentage de votre revenu brut annuel tirez-vous des « services de R&D payés » que vous fournissez à des clients de l'extérieur du Canada?
- a. Aucun
  - b. < 10 %



- c. 11 - 20 %
- d. 21 - 30 %
- e. 31 - 40 %
- f. 41 - 50 %
- g. > 51 %

9. Classez vos trois principaux marchés non canadiens.

- a. É. U.
- b. Mexique
- c. R. U.
- d. Reste de l'UE
- e. Russie, anciens États de l'Union soviétique, et reste de l'Europe de l'Est
- f. Moyen Orient et Afrique du Nord
- g. Asie du Sud
- h. Asie du Sud Est
- i. Chine / Hong Kong / Taiwan
- j. Corée
- k. Japon
- l. Australasie
- m. Amérique centrale et du Sud
- n. Afrique subsaharienne

10. Est-ce que votre organisation vend d'autres services scientifiques appuyant vos « services de R&D payés »?

- a. Oui
- b. Non

c. Ne sais pas

11. Quels sont ils et dans quelle mesure contribuent ils à vos « services de R&D payés »?

12. Est-ce que votre organisation fournit des « services de R&D payés » à des clients aux É.U. ou que la concurrence américaine vous touche?

a. Oui

b. Non

c. Ne sais pas

13. Quel énoncé caractérise le mieux le gros de votre expérience en ce qui concerne les obstacles au commerce, la réglementation ou d'autres obstacles?

a. Mon entreprise/organisation n'a pas éprouvé de difficulté / a éprouvé peu de difficulté à vendre des « services de R&D payés » à des clients aux É.U.

b. Des concurrents américains ont peut être pénétré le marché canadien, mais ils n'ont pas touché ma capacité de vendre des « services de R&D payés » au Canada.

c. Des concurrents américains ont pénétré le marché canadien et ils ont touché ma capacité de vendre des « services de R&D payés » au Canada.

*Veillez préciser*

14. En ce qui concerne les autres principaux marchés non canadiens, vous heurtez-vous à des obstacles qui vous empêchent de vendre vos « services de R&D payés »? [Par exemple, propriété intellectuelle, mobilité du personnel, etc.]

*Veillez préciser le marché.*



15. Connaissez-vous des restrictions ou des règlements canadiens qui peuvent empêcher un fournisseur étranger (autre qu'américain) de services de R&D d'offrir ses services au Canada?

*Veillez préciser*

16. Cela vous poserait-il des problèmes si le Canada garantissait à ses partenaires de l'OMC le même niveau d'accès à son marché des services de R&D que celui qu'il offre à ses partenaires de l'ALENA?

a. Oui


b. Non

*Veillez préciser*

17. Aimerez-vous être tenu au courant de l'avancement et des résultats de la présente initiative ? Si c'est le cas, veuillez nous fournir ci-après votre nom et adresse électronique.

# CATAAlliance Notice to Members

CATAAlliance

 Industrie  
Canada Industry  
Canada



## Action Item

Please respond to this survey if your organization conducts “paid for” R&D services (for cost and/or profit) for outside clients. Closing date is June 6, 2005!

<http://www.e-penso.com/survey/s?s=GATSRandD>

Pour votre action!

Veillez participer à ce sondage seulement si votre organisation effectue des services de R&D payés « au prix coûtant ou à profit » pour des clients de l'extérieur. Ce sondage sera disponible jusqu'au 6 juin 2005!

[Version française](#)

## New Survey to Assess NAFTA Experience for Possible Application to GATS

### ***Measuring past experience and possible competitive impacts on “paid for” Research and Development (R&D) services***

CATA has been asked by Industry Canada to conduct a short survey on R&D services that you provide but are paid for by outside clients. For the survey, the phrase “paid for” is shorthand for R&D services you provide but are paid for by outside clients.

The results of this survey will help decide positions that the Government of Canada will take in international trade negotiations at the World Trade Organization.

What we are trying to find out:



- Almost unrestricted trade in R&D services under NAFTA has been in place for a decade. How have you benefited, how have you been impacted?
- Suppose we had similar opportunities under the World Trade Organization's General Agreement on Trade in Services. How do you think you would benefit, how do you think you would be impacted?

### **Purpose of Questionnaire:**

The purpose of this questionnaire is to find out:

- how extensively Canada-based providers of "paid for" R&D sell their services to clients outside Canada;
- what's been your experience under NAFTA;
- whether you think that creating greater access to international "paid for" R&D services, through the General Agreement on Trade in Services (GATS) at the World Trade Organization, will increase overseas opportunities for Canada-based providers; and,
- whether you think that such access could result in greater competition in Canada (from the entry of new foreign providers) that would outweigh the overseas opportunities.

A fuller explanation is provided in the [Appendix](#) provided below.

Thank you in advance for your participation in this important initiative.

## **Nouveau sondage visant à évaluer l'expérience ALÉNA pour application possible au AGCS**

### ***Mesurer les expériences passées et les impacts au niveau compétitif des services de R&D payés.***

La CATA a été invitée par Industrie Canada à effectuer une brève enquête sur les services de R&D que vous fournissez à des clients externes contre paiement. [Dans la présente enquête, nous utiliserons l'expression « services de R&D payés » pour désigner en abrégé les services de R&D que vous fournissez à des clients de l'extérieur contre paiement.]

Les résultats de cette enquête aideront le gouvernement du Canada à décider des positions qu'il adoptera dans les négociations commerciales internationales à l'Organisation mondiale du commerce.

Voici ce que nous voulons savoir :

- Un commerce presque sans restriction des services de R&D dans le cadre de l'ALENA existe depuis une décennie. Quels avantages en avez- vous tiré, de quelle façon avez- vous été touché?
- Supposez que nous ayons des possibilités similaires dans le cadre de l'Accord général sur le commerce des services de l'Organisation mondiale du commerce. Quels avantages en tireriez- vous, de quelle façon seriez- vous touché?

### **Objectif du questionnaire :**

Ce questionnaire vise à déterminer :

- la mesure dans laquelle les fournisseurs canadiens de « services de R&D payés » vendent leurs services à des clients de l'extérieur du Canada;
- ce qu'a été votre expérience à cet égard dans le cadre de l'ALENA;
- si vous croyez que l'élargissement de l'accès aux « services de R&D payés » internationaux, dans le cadre de l'Accord général sur le commerce des services (AGCS) de l'Organisation mondiale du commerce, augmentera les possibilités des fournisseurs canadiens à l'étranger;
- si vous pensez que cet accès élargi pourrait entraîner une plus grande concurrence au Canada (de la part de nouveaux fournisseurs étrangers), qui serait plus importante que les possibilités à l'étranger.

Si vous voulez des explications supplémentaires, consultez [l'annexe](#) du questionnaire.

Merci de votre participation à cette importante initiative !

### **Appendix: What the Questionnaire is all about.**

In the 21st century economy, where the domestic and international marketplaces are increasingly linked as seamless locations for global business transactions, sectors that are highly export-oriented and competitive, such as Research and Development (R&D), are key drivers of economic growth. The contribution that an open, competitive and tradable R&D services sector can make to Canada's future prosperity could be enhanced by recording the conditions of market access into a trade agreement - providing security and stability for those seeking to do business here and for Canadian firms seeking to do business abroad.



Trade in R&D services is almost fully open under NAFTA. However, there are some key protections. The first protection occurs in an Annex II-C-9 of NAFTA where Canada reserved the right to adopt or to maintain any measure with respect to the provision of public education and training to the extent that it is provided for a public purpose. Canada has further protected public education services by not taking any commitments in public education services and committing not to do so in the future. Despite NAFTA's broad R&D services commitments, R&D subsidies are not covered by the NAFTA. In fact, all subsidies are carved out of the NAFTA (i.e. they are not covered by any of the obligations outlined in the agreement).

R&D services is one of the categories of services in which member governments of the World Trade Organization can and have made commitments under the General Agreement on Trade in Services (GATS). All members who have made commitments for R&D services use a standard classification system to describe R&D services. This category covers activities related to the systematic investigation through experiment or analysis to achieve a scientific or commercial advance for, or through, the creation of new or significantly improved products or processes. Specifically, this Central Product Classification system defines the R&D sector by way of the following three categories:

- Research and experimental development services on natural sciences and engineering
- Research and experimental development services on social sciences and humanities, and;
- Interdisciplinary research and experimental development services

Under GATS, Canada has committed itself to granting market access and national treatment on modes 1 (cross-border trade), 2 (consumption abroad) and 3 (commercial presence) in only one category - research and experimental development services on social sciences and humanities (including law and economics, except linguistics and language). Canada is not obliged to give the same treatment to foreign services suppliers as it does to domestic services suppliers in the two other R&D categories defined under GATS.

GATS also contains a general limitation stating that R&D subsidies are not covered. Other general limitations in Canada's schedule that apply to R&D services are:

- tax measures that result in differences of treatment with respect to expenditures made on scientific research and experimental development services;
- measures conferring tax exemptions or reductions;
- the Investment Canada Act with respect to acquisitions; and,
- nationality requirements for senior management or members of board of directors.



Arguably, in light of this evidence, the protections afforded by GATS are at least as good, if not more so, as those in NAFTA where a full commitment has been made with respect to trade in R&D services. Moreover, with more than a decade of open and thriving trade in R&D services under its belt and no challenges or negative impacts on the education front, NAFTA provides a compelling demonstration case indicating that a similar commitment could be made in the GATS with little or no concern.

The questionnaire is the first step to finding out whether this last assertion has merit.

### **Annexe : Raison du questionnaire**

Dans l'économie du 21<sup>e</sup> siècle, où les marchés nationaux et internationaux sont de plus en plus reliés de façon transparente en vue d'effectuer des opérations commerciales partout dans le monde, les secteurs fortement axés sur l'exportation et très concurrentiels, comme la recherche et le développement (R&D), sont des facteurs clés de la croissance économique. La contribution qu'un secteur ouvert et concurrentiel de services de R&D échangeables peut apporter à la prospérité future du Canada pourrait être améliorée par l'inscription des conditions d'accès aux marchés dans un accord commercial – fournissant sécurité et stabilité aux entreprises cherchant à faire des affaires au Canada et aux entreprises canadiennes souhaitant faire de même à l'étranger.

Le commerce des services de R&D est presque entièrement ouvert dans le cadre de l'ALENA, qui prévoit cependant quelques mesures de protection importantes. La première mesure de protection est indiquée à l'annexe II- C- 9 de l'ALENA, où le Canada se réserve le droit d'adopter ou de maintenir toute mesure concernant la prestation de services d'enseignement et formation publics si ces services sont fournis dans l'intérêt public. Le Canada a davantage protégé les services d'enseignement public en ne prenant pas d'engagements les concernant et en s'engageant à ne pas en prendre dans l'avenir. Malgré les grands engagements pris dans l'ALENA à l'égard des services de R&D, les subventions à la R&D ne sont pas couvertes par l'ALENA. En fait, toutes les subventions sont absentes de l'ALENA (c. à d. qu'aucune des obligations énoncées dans l'accord ne fait mention).

Les services de R&D sont une des catégories de services pour lesquelles les gouvernements membres de l'Organisation mondiale du commerce peuvent et ont pris des engagements dans le cadre de l'Accord général sur le commerce des services (AGCS). Tous les membres qui ont pris des engagements à l'égard des services de R&D utilisent un système de classification type pour les décrire. Cette catégorie comprend les activités « d'investigation systématique effectuées au moyen d'expérimentations ou d'analyses en vue de réaliser des progrès scientifiques ou commerciaux pour ou par la création de produits ou de procédés nouveaux ou



considérablement améliorés ». Plus précisément, la Classification centrale de produits définit le secteur de R&D au moyen des trois catégories suivantes :

- Services de recherche et de développement expérimental en sciences naturelles et génie;
- Services de recherche et de développement expérimental en sciences sociales et sciences humaines;
- Services interdisciplinaires de recherche et de développement expérimental.

Dans le cadre de l'AGCS, le Canada s'est engagé à accorder l'accès à son marché et au traitement national pour les modes 1 (commerce transfrontalier), 2 (consommation à l'étranger) et 3 (présence commerciale) en ce qui concerne seulement une catégorie – services de recherche et de développement expérimental en sciences sociales et sciences humaines (y compris le droit et l'économie, mais non la linguistique et les langues). Le Canada n'est pas obligé d'accorder aux fournisseurs étrangers de services le même traitement qu'il accorde aux fournisseurs nationaux de services en ce qui concerne les deux autres catégories de R&D définies dans l'AGCS.

L'AGCS contient également une restriction générale précisant que les subventions à la R&D ne sont pas couvertes. Les autres restrictions générales de l'annexe du Canada qui s'appliquent aux services de R&D sont:

- mesures fiscales entraînant des différences de traitement en ce qui concerne les dépenses engagées pour des services de recherche scientifique et de développement expérimental;
- mesures accordant des exemptions ou des réductions d'impôt;
- Loi sur Investissement Canada, en ce qui concerne les acquisitions;
- exigences relatives à la nationalité pour la haute direction ou les membres de conseils d'administration.

Compte tenu des faits indiqués ci dessus, on peut soutenir que les mesures de protection accordées par l'AGCS sont au moins aussi bonnes, sinon meilleures, que celles prévues par l'ALENA, lorsqu'un engagement complet a été pris relativement au commerce des services de R&D. De plus, étant donné que, dans le cadre de l'ALENA, il existe depuis plus de dix ans un commerce ouvert et prospère des services de R&D et qu'il n'y a pas eu d'incidences négatives ou de difficultés en ce qui concerne l'enseignement, cet accord est une démonstration convaincante qu'un engagement similaire pourrait être pris dans le cadre de l'AGCS sans ou avec peu d'inquiétude.

Le questionnaire est la première étape qui permettra de déterminer le bien fondé de cette dernière affirmation.

## **About CATAAlliance: The business of technology**

Canadian Advanced Technology Alliance (CATAAlliance) is Canada's leading, most influential and entrepreneurial technology alliance. It is committed to growing the global competitiveness of its members, 80% of which are currently active exporters. The common purpose that unites the membership is CATAAlliance's commitment to members' business growth. With offices across the country, we are focused on the provision of business services and government relations programs that conserve and leverage member resources. Because members are action-oriented businesses, CATAAlliance responds with action when members need specific services or activities. The "Traditional Champion" of Canadian research and development, CATAAlliance's mission is to stimulate "Global Business Growth" through the forces of Canadian innovation and strategic partnership.

More information about CATA can be found on the CATA Web site:

[www.cata.ca](http://www.cata.ca)



## Appendix C – Detailed Results

The following tables provide the detailed quantitative results.

Where are you located?		
<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. Atlantic Canada	1	2%
2. Quebec (except NCR)	2	5%
3. Ontario (except NCR)	17	40%
4. National Capital Region (NCR)	13	31%
5. Prairies	5	12%
6. BC	4	10%
<b>Total</b>	<b>42</b>	<b>100%</b>

What kind of organization/firm are you?		
<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. Commercial firm	30	73%
2. University lab / institute / tech centre	4	10%
3. Government institute	2	5%
4. Non-profit research organization	4	10%
5. Other	1	2%
<b>Total</b>	<b>41</b>	<b>100%</b>

In what sectors do you primarily provide "paid for" R&D services? <i>Check up to three as appropriate.</i>		
<i>Options</i>	<i>Count</i>	<i>Percent</i>
1. Transportation and storage	1	2%
4. Information, Communications, Telecommunications, Ecom	22	52%
5. Finance, insurance and real estate	3	7%
6. Computer systems design and related services	10	24%
7. Architecture, engineering and related services	7	17%
8. Management, scientific and technical consulting	11	26%
9. Scientific research and development, health care and social assistance	19	45%
10. Other	6	14%
<b>Total</b>	<b>42</b>	<b>188%</b>
<i>Note that percentages equal more than 100% as respondents were asked to select more than one option</i>		

How many full-time-equivalent employees do you usually have working on "paid for" R&D services?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. < 10	26	62%
2. 10 - 49	12	29%
3. 50 - 99	1	2%
5. > 100	3	7%
<b>Total</b>	<b>42</b>	<b>100%</b>

What is your organization's annual gross in "paid for" R&D services provided to your clients?

*All amounts below in Canadian dollars.*

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. 0 – 9.9 million	39	93%
2. 10 – 19.9 million	2	5%
6. > 50 million	1	2%
<b>Total</b>	<b>42</b>	<b>100%</b>

How much of your "paid for" R&D services are done on behalf of a parent or an associated firm owned by the parent firm?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. < 30%	37	95%
2. 31 - 50%	1	3%
3. > 51%	1	3%
<b>Total</b>	<b>39</b>	<b>100%</b>

Approximately what percentage of your annual "paid for" R&D services gross is done for clients outside Canada?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. None	9	21%
2. < 10%	15	35%
3. 11 - 20%	4	9%
4. 21 - 30%	2	5%
5. 31 - 40%	1	2%
7. > 51%	12	28%
<b>Total</b>	<b>43</b>	<b>100%</b>



Rank your primary three non-Canadian markets.

<i>Options</i>	<b>1</b>	<b>2</b>	<b>3</b>
USA	22 85% 67%	1 4% 4%	3 12% 16%
Mexico	1 33% 3%	2 67% 8%	0
UK	1 11% 3%	7 78% 27%	1 11% 5%
Rest of EU	2 13% 6%	9 56% 35%	5 31% 26%
Russia, former states of Soviet Union, and rest of Eastern Europe	1 50% 3%	0	1 50% 5%
Middle East and North Africa	1 100% 3%	0	0
South Asia	1 33% 3%	1 33% 4%	1 33% 5%
SE Asia	0	1 50% 4%	1 50% 5%
China / Hong Kong / Taiwan	0	2 67% 8%	1 33% 5%
Korea	0	0	2 100% 11%
Japan	2 50% 6%	2 50% 8%	0
Australasia	0	0	3 100% 16%
Central and South America	2 67% 6%	0	1 33% 5%
Sub-Saharan Africa	0	1 100% 4%	0

**Total responses: 33**

**Sequence of numbers in a cell:**  
 Count  
 Percent across the columns  
 Percent down the rows

Does your organization sell other science-related services that support your “paid for” R&D services?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. Yes	14	41%
2. No	14	41%
3. Do not know	6	18%
<b>Total</b>	<b>34</b>	<b>100%</b>

Has your organization provided R&D “paid for” services to clients in the USA and/or have been impacted by U.S. competition?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. Yes	14	41%
2. No	11	32%
3. Do not know	9	26%
<b>Total</b>	<b>34</b>	<b>100%</b>

*Only “Yes” responses from above question were asked to respond.*

Which statement best characterizes the majority of your experience regarding trade, regulatory, or other barriers with the U.S.?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. My firm/organization has experienced no/little difficulty in selling “paid for” R&D services to clients in the USA	8	57%
2. U.S. competitors might have penetrated the Canadian market but they have not impacted my ability to sell “paid for” R&D services in Canada	2	14%
3. U.S. competitors have penetrated the Canadian market and have impacted on my ability to sell “paid for” R&D services in Canada	4	29%
<b>Total</b>	<b>14</b>	<b>100%</b>

Would it cause you problems if Canada were to guarantee the same level of access to its R&D services market for its WTO partners as it does for its NAFTA partners?

<i>Option</i>	<i>Count</i>	<i>Percent</i>
1. Yes	7	22%
2. No	25	78%
<b>Total</b>	<b>32</b>	<b>100%</b>



## Appendix D – Overview of Canadian CROs

The following information is excerpted from The 1998 Industry Canada paper *The Commercial Contract R&D Industry: a Snapshot* and provided here to demonstrate context for this report. The full report can be downloaded here: <http://strategis.ic.gc.ca/pics/bp/snapen.pdf>

### Contract Research Organizations:

Contract Research Organizations (CROs) are defined as firms that specialize in contract research, those that derive 50% or more of their revenues from R&D contracts, and all non-revenue organizations carrying out some level of contract R&D. Of the 142 CROs identified, 116 were firms and 26 were non-revenue organizations. While the majority of CROs are classified under SIC's 7721 (Computer Services), 7752 (Offices of Engineers), 7759 (Other Scientific and Technical Services) and 7771 (Management Consulting services), many other SICs are represented. This suggests that there are niche market opportunities for highly specialized firms operating in a number of different industries to offer R&D contract services to these industries and that this is different from the situation in respect to the firms operating in Major Group 77 where the firms are offering R&D services to a number of different industries.

### Sources of contracts:

CROs tend to have a broader base of clients than do firms that do R&D contract work on the side. As a result, CROs are less likely to rely on just a single source for R&D contract work, whether it be other Canadian or foreign companies, or the federal government. It is interesting to note that, while Canadian firms were the most popular source of R&D contracts, more than a quarter of CROs did no work at all for Canadian companies. Fifty-six percent of CROs identified listed the federal government as a source of R&D contracts and 30 percent of those identified listed foreign firms as a source.

### Firms:

In general, firms that derive 50% or more of their revenues from R&D contract work tend to be small, with over half having revenues less than \$1 million. Only six firms had revenues of \$10 million or more; however, their total revenues were more than three times greater than that of all other firms together specializing in contract research. Figure 2 demonstrates that the total revenues of this group of firms are concentrated among a small number of larger firms.

The smallest firms tend to rely on federal government contracts for the bulk of their revenues and very little on contracts with unaffiliated foreign firms. As firms' revenues



increased, their dependence on federal government contracts decreased and this is offset to a large degree by R&D contract revenues stemming from work done for unaffiliated foreign firms and to a lesser extent unaffiliated Canadian firms. In total, contracts with Canadian firms, foreign firms and the federal government accounted for 50, 34, and 16 percent of the approximately \$291 million in R&D contract work performed by these firms.

The larger firms that specialized in R&D contract work also dominated in terms of employment. Of the 4,707 people employed by firms that specialized in contract R&D in 1995, 67 percent worked for firms whose revenues were equal to or greater than \$10 million. Alternatively, the 83 firms that have revenues less than \$1 million employed only 605 people.

#### Employment, Firms That Derive 50% or More of their Revenues from R&D Contracts, by Revenue Size, 1995

Given that "firm" CROs specialize in the provision of R&D services, it comes as no surprise that the vast majority, 84 percent, of their workforce is engaged in some form of R&D, whether it be contract R&D or R&D for the firm itself. Of this total, about half are scientists or engineers. Interestingly, the composition of the workforce engaged in R&D in different sized firms does not vary considerably when firm size is measured by revenues. However, smaller firms seem to have fewer support staff relative to the number of professionals engaged in R&D when compared to larger firms. Of those employees engaged in R&D, the majority of them are university educated professionals.

#### **Intramural R&D:**

CROs expend a great deal of their resources on R&D. In 1995, firms that specialized in contract research had \$368 million in intramural R&D expenditures while non-revenue organizations had \$138 million. In both cases, current expenditures such as wages, salaries and operational expenses accounted for the vast majority of these totals. These expenditures include resources spent on R&D for a client as well as R&D for the sake of the organization. In many instances, and especially in the case of smaller firms, intramural R&D expenditures often exceeded firms' total revenues by a wide margin. It is interesting to note the degree of outward orientation of firms' R&D activities, i.e., does a firm do R&D principally on behalf of its clients or is it largely pursuing an R&D agenda of its own. The data suggests that, in terms of revenue size, larger CROs' R&D activities are more oriented to the consumer market, while smaller firms tend to conduct the majority of their R&D on their own behalf. One possible explanation for this trend is that in many small firms R&D contract work may act as a transition stage until they can develop and commercialize their own technologies.



