
Supporting Regional Innovation in Toronto

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Locomotive Final Conference
5-6 June, 2007
Hamburg, Germany

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The Toronto Region



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A Vibrant and Innovative Region

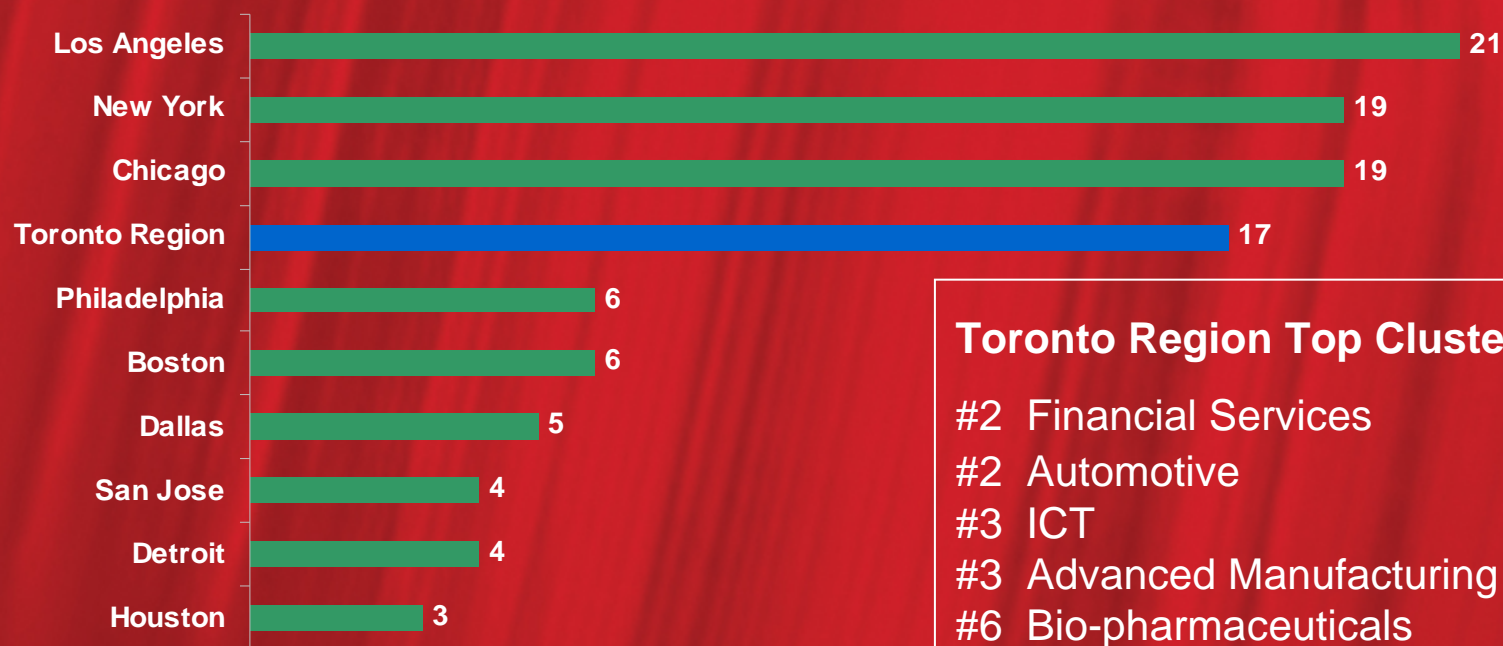
- 7.2 million people (5th largest in North America)
- \$323b GDP
- 35% of all R&D in Canada
- \$6b private and public sector R&D
- Over 5,000 major ICT, Bio Life Sciences and Advanced Manufacturing companies
- Over 33% of Canada's most highly cited scientists (52 star scientists)
- USTPO Patent Applications (2005): 1,615
- 16 Major Public Research Institutions
- 101 Venture Deals totaling \$328 million US (2005)

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Hub of Leading Clusters

Number of key strategic clusters in which the region ranks in the Top 5 in North America



Toronto Region Top Clusters

- #2 Financial Services
- #2 Automotive
- #3 ICT
- #3 Advanced Manufacturing
- #6 Bio-pharmaceuticals

Magnet for Innovative Companies

**TORONTO
REGION** 
ACCELERATE INNOVATION.

ABB

ALCATEL

 **CELESTICA™**

HUSKY

 **Pratt & Whitney Canada**
A United Technologies Company

 **Alias®**

AMD 

 **CGI**

 **IBM®**

 **LEXUS**

 **Pfizer®**

APOTEX

ERICSSON 

 **MDS**
Science advancing health



sanofi pasteur
The vaccines business of sanofi-aventis Group

AstraZeneca 

 **imagination at work**

Microsoft®

SIEMENS

 **ATI**

GENNUM

 **MAGNA**

Autodesk®

 **GM**

NOKIA
CONNECTING PEOPLE

NORTEL
NETWORKS



TOYOTA

 **Bell**

Google

OPEN TEXT
CORPORATION



 **BIOVAIL**

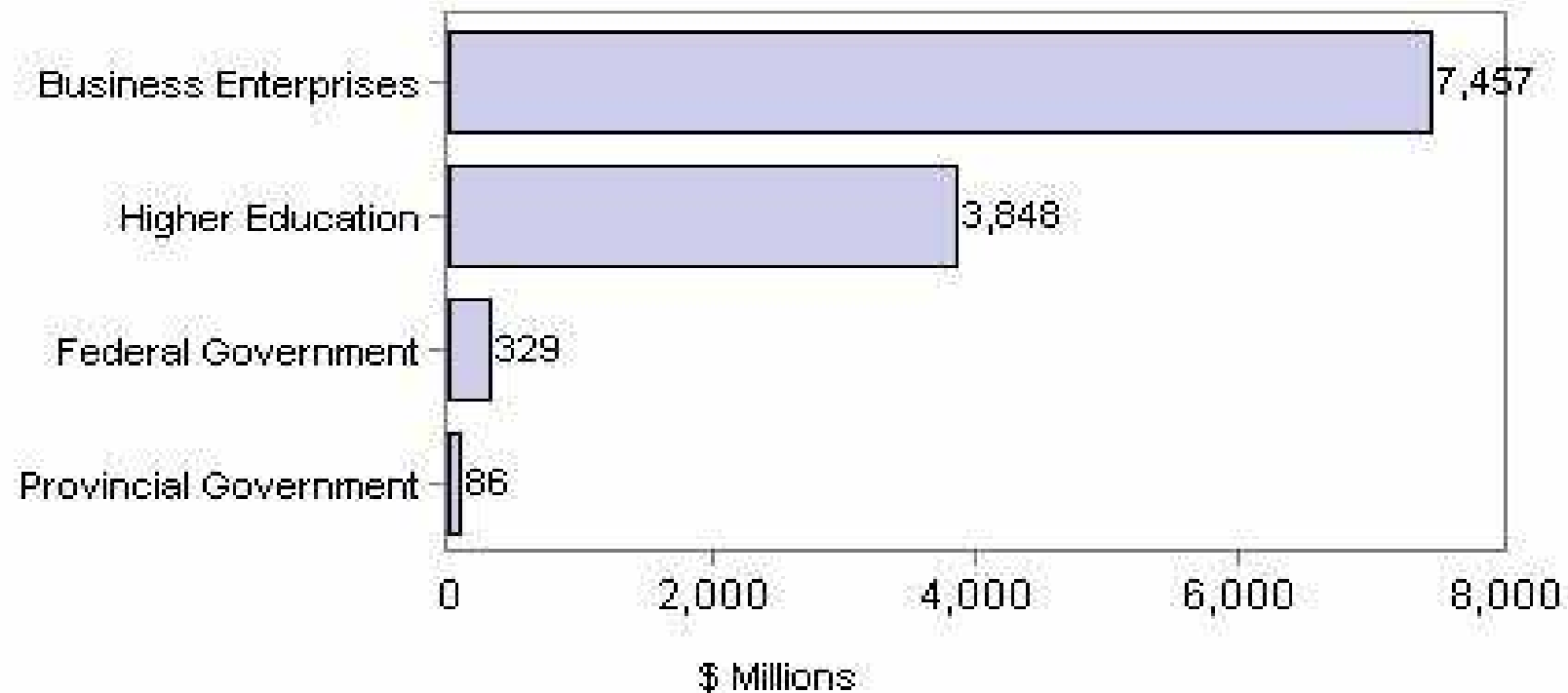
 **gsk**
GlaxoSmithKline

 **hp**
invent

 **Pfizer**

XEROX®

**Ontario Gross Expenditures on R&D
by Performing Sectors 2004
Total \$11.7 Billion**

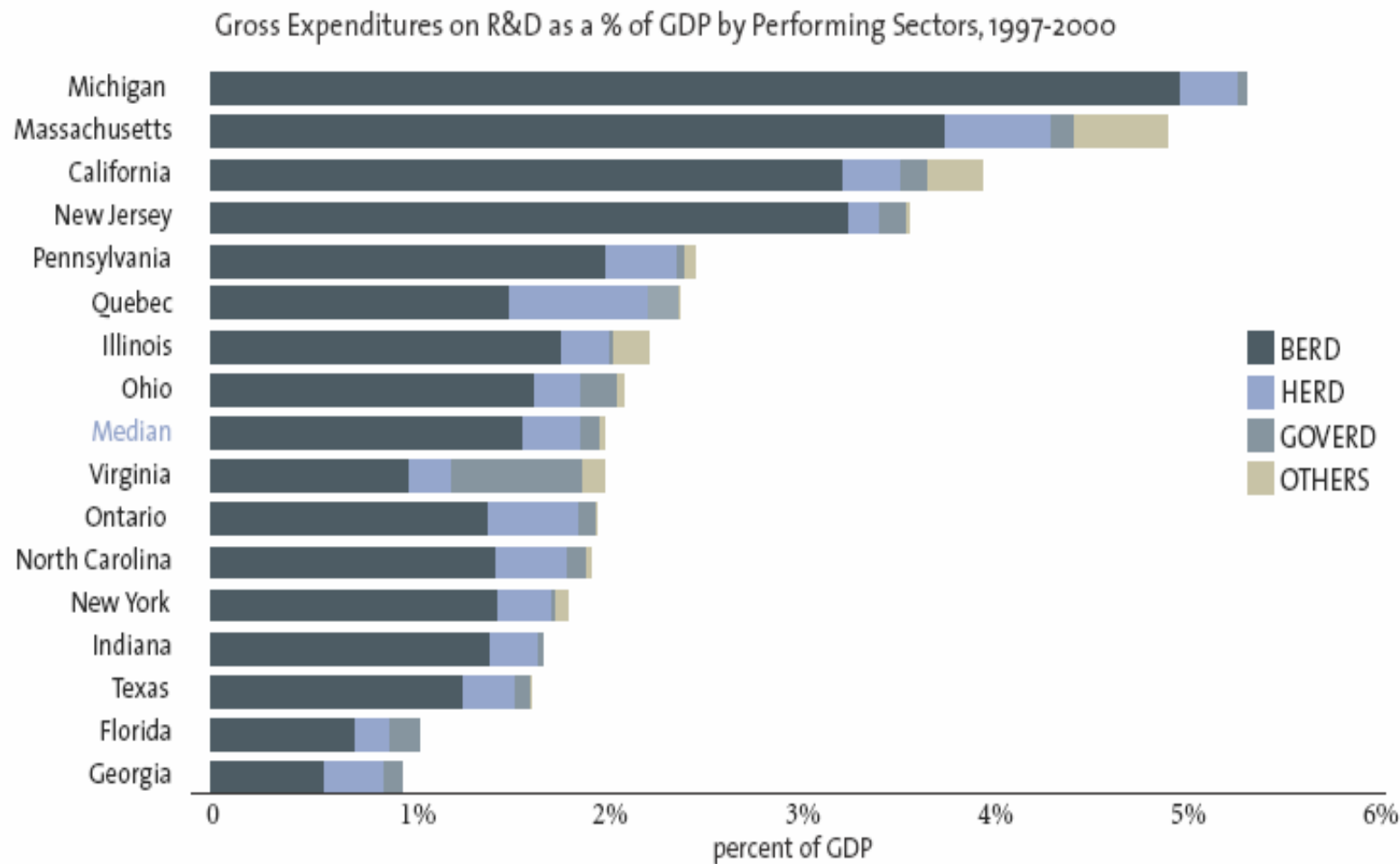


Source: Statistics Canada, Science Statistics

September 2006

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Source: Statistics Canada - Science, Innovation and Electronic Information Division;
National Science Foundation

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Canada's Top 100 Corporate R&D Spenders 2006

Rank	2005	2004	Company	R&D Expenditures			Revenue	Research Intensity	Industry
				FY2005 \$000	FY2004 \$000	% Change 2004-2005			
1			Nortel Networks Corporation*	\$2,248,730	\$2,549,639	-11.8	\$12,749,667	17.6	Comm/telecom equipment
2			Bell Canada	\$1,740,000	\$1,451,000	19.9	\$17,250,000	10.1	Telecommunications services
3			Magna International Inc.*	\$823,888	\$689,795	19.4	\$27,637,808	3.0	Automotive
4			Pratt & Whitney Canada Corp. (fs)	\$472,000	\$465,000	1.5	\$2,700,000	17.5	Aerospace
5			ATI Technologies Inc.*	\$451,372	\$389,063	16.0	\$2,692,792	16.8	Computer equipment
6			IBM Canada Ltd. (fs)	\$343,000	\$334,000	2.7	\$5,500,000	6.2	Software and computer services
7			Alcan Inc.*	\$275,033	\$311,059	-11.6	\$24,619,712	1.1	Mining and metals
8			Atomic Energy of Canada Limited	\$264,092	\$215,879	22.3	\$286,567	92.2	Energy/oil and gas
9			Bombardier Inc.*	\$212,030	\$192,622	10.1	\$17,842,022	1.2	Aerospace
10			Ericsson Canada Inc. (fs)	\$201,000	\$235,000	-14.5	\$610,000	33.0	Comm/telecom equipment
11			Alcatel Canada Inc. (fs)	\$194,000	\$190,000	2.1	nd		Comm/telecom equipment
12			Apotex Inc.	\$183,141	\$172,363	6.3	\$1,000,000	18.3	Pharmaceuticals/biotechnology
13			Pfizer Canada Inc. (fs)	\$178,730	\$157,883	13.2	\$2,162,707	8.3	Pharmaceuticals/biotechnology
14			GlaxoSmithKline Inc. (fs)	\$135,535	\$140,317	-3.4	\$975,125	13.9	Pharmaceuticals/biotechnology
15			Cognos Incorporated*	\$128,354	\$118,692	8.1	\$1,000,213	12.8	Software and computer services
16			TELUS Corporation	\$125,000	\$56,700	120.5	\$8,142,700	1.5	Telecommunications services
17			Research In Motion Limited*	\$122,590	\$84,210	45.6	\$1,636,202	7.5	Comm/telecom equipment
18			Merck Frost Canada Ltd. (fs)	\$117,019	\$117,673	-0.6	\$606,897	19.3	Pharmaceuticals/biotechnology
19			Suncor Energy Inc.	\$108,000	\$95,000	13.7	\$11,084,000	1.0	Energy/oil and gas
20			Biovail Corporation*	\$107,692	\$94,359	14.1	\$1,133,495	9.5	Pharmaceuticals/biotechnology



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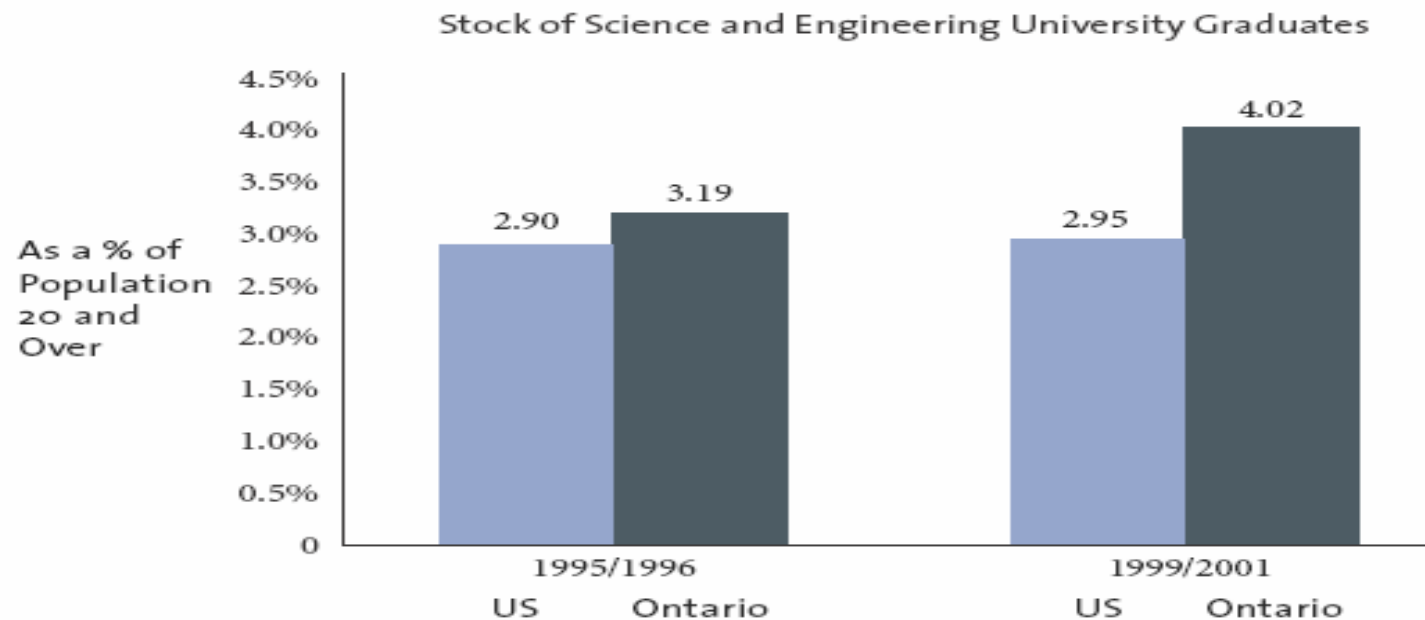
Strengths of the Toronto Region

- Quality of the Labour Force
- Excellent Knowledge and Research Infrastructure
- Competitive Costs
- Advanced Producer Services
- Generous Government Support

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Highly Educated Workforce



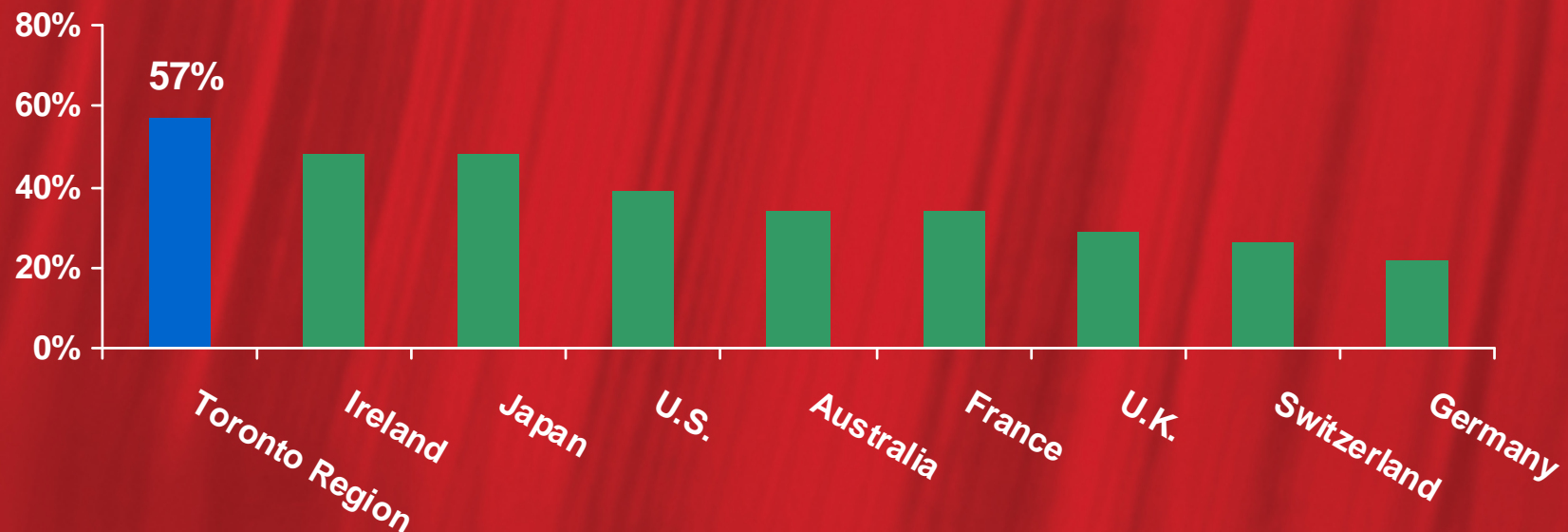
Source: Statistics Canada; Canism II; National Science Foundation

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Best Educated Workforce in the World

Percentage of Workers with Post-Secondary Education
(25 to 64 years of age)



Source: Statistics Canada and OECD, 2003

World Class Research and Education Infrastructure

- **9 Universities**
- **11 Academic Hospitals**
- **8 Institutes of Technology and Colleges**
- **Over 300 Research Institutes**
- **240,000 Students**
- **70,000 Graduating Students per Year**
- **10,000 Faculty Members**

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Advanced Research Collaborations – Specialized Institutions

- Canadian Institute for Advanced Research
- Guelph Molecular Super Centre
- MaRS Discovery District
- Ontario Centres of Excellence
- Ontario Institute for Cancer Research
- Perimeter Institute for Theoretical Physics
- Sheridan Science and Technology Park

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Lower Corporate Income Taxes (% of income)



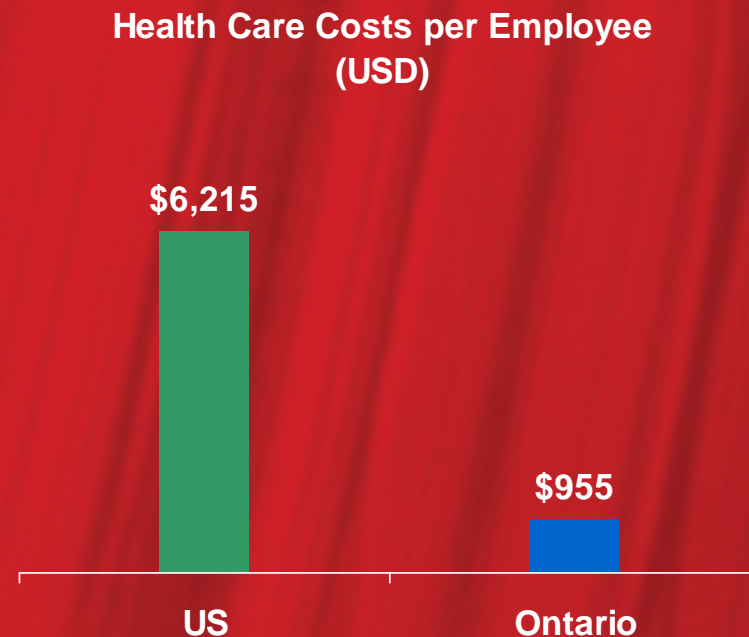
Low Operating Costs for Research and Development



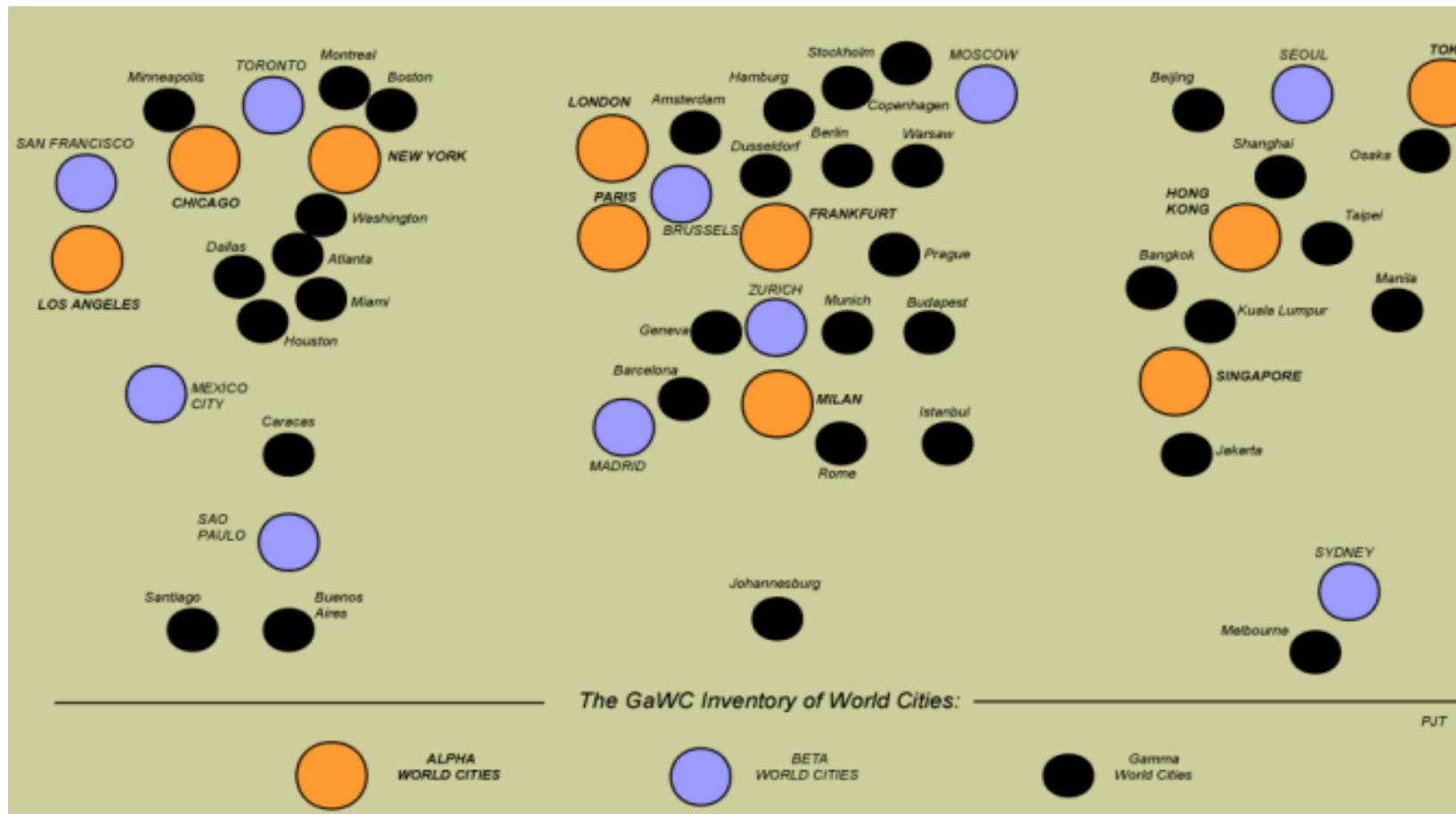
Source: KPMG Competitive Alternatives, 2006

Major Savings on Employee Health Care Costs

- 85% lower than in the US per employee
- 75% covered by Government of Canada
- US system relies more on private funding
- Cost gap expected to widen



Toronto Ranks High Globally on Advanced Producer Services



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Canadian Support

- Scientific Research & Experimental Development (SR&ED) Tax Credit
- Federal Industrial Research Assistance Program (IRAP)
- Federal Sustainable Development Technology Canada
- Federal Technology Partnerships Canada
- Canadian Institutes for Health Research (CIHR)
- Canada Foundation for Innovation (CFI)

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Provincial Support

- **Grants and loans**
 - **Ontario Advanced Manufacturing Investment Strategy (AMIS)**
 - **Ontario Market Readiness Program**
 - **Ontario Innovation Tax Credit (OITC)**
- **Other Support**
 - **Regional Innovation Networks**
 - **Ontario Centres of Excellence**
 - **Industry Liaison Initiatives by Universities, Institutes of Technology and Colleges, and Hospitals**

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Recent Initiatives - Ontario

Early Researcher Awards

Health Technology Exchange (HTX)

Innovation Demonstration Fund

International Strategic Opportunities Program

Ontario Research Commercialization Program

Ontario Research Fund

Premier's Catalyst/Discovery Award

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Challenges

- Retaining and Growing R&D Performing Firms
- Hollowing Out?
- Commercialization Gap
- Lower VC Investment and Return

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Hollowing Out?

Exhibit B Of Canada's 33 global leaders in 1985, only 16 remain

33 Global Leaders in 1985

Abitibi-Price	Harlequin	Northern Telecom
Alcan	<i>Hiram Walker</i>	<i>Scott's Hospitality</i>
AMCA	HBC fur auction (now North American Fur Auctions)	<i>Seagram Co.</i>
<i>Asbestos Corporation Ltd.</i>	<i>Inco</i>	SNC*
Atco Ltd.	<i>Laidlaw</i>	Teck-Cominco
Bombardier	Lavalin*	Tembec
<i>Canada Malting</i>	<i>Lumonics</i>	<i>Thomson Travel</i>
CCL Industries	McCain	Timminco
<i>Falconbridge</i>	Mitel	Trimac
Finning International	<i>Moore Corporation Ltd.</i>	<i>Trizec</i>
<i>Geac Computers</i>	<i>National Business Systems</i>	<i>Unican Security Systems</i>

16 departures and 1 merger (*): loss of 17 global leaders since 1985

Source: Institute for Competitiveness & Prosperity analysis.

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Creating World Leaders

Exhibit C Canada has created 56 new global leaders since 1985

72 Global Leaders Currently (since 1985)

<i>Abitibi Consolidated</i>	<i>Cinram</i>	<i>Megellan Aerospace</i>	<i>Ritchie Bros. Auctioneers</i>
<i>Agrium</i>	<i>CN Rail</i>	<i>Magna</i>	<i>Scotia Mocatta</i>
<i>Alcan</i>	<i>Connors Bros.</i>	<i>Major Drilling</i>	<i>Shawcor Ltd.</i>
<i>Ashton-Potter</i>	<i>Coolbrands</i>	<i>Manulife Financial</i>	<i>Sierra Wireless</i>
<i>Atco Ltd.</i>	<i>Cott</i>	<i>Marsulex</i>	<i>SNC-Lavalin</i>
<i>ATS</i>	<i>Couche-Tard</i>	<i>McCain's</i>	<i>Spectra Premium Industries</i>
<i>Axcan Pharma</i>	<i>Dalsa</i>	<i>MDS</i>	<i>SunGro Horticulture</i>
<i>Barrick Gold</i>	<i>Finning International</i>	<i>Methanex</i>	<i>TD Waterhouse/Ameritrade</i>
<i>Bombardier</i>	<i>Fording</i>	<i>Mitel</i>	<i>Teck-Cominco</i>
<i>CAE</i>	<i>Four Seasons*</i>	<i>N. American Fur Auction</i>	<i>Tembec</i>
<i>Cemeco</i>	<i>Gildan</i>	<i>Northern Telecom</i>	<i>Thomson Corp.</i>
<i>Canam Steel</i>	<i>Harlequin</i>	<i>NOVA Chemicals</i>	<i>Timminco</i>
<i>Canfor</i>	<i>Husky Injection Molding</i>	<i>Open Text</i>	<i>TLC Vision</i>
<i>CCL Industries</i>	<i>Imax</i>	<i>Pantheon</i>	<i>Tree Island Industries</i>
<i>Celestica</i>	<i>Jim Pattison Group</i>	<i>Peerless Clothing</i>	<i>Trimac</i>
<i>CHC Helicopter</i>	<i>Linamar</i>	<i>Potash Corp.</i>	<i>Westcast Industries</i>
<i>Chemtrade Logistics</i>	<i>Maax</i>	<i>Quebecor World</i>	<i>Weston Foods</i>
<i>CGI</i>	<i>MacDonald Dettwiler</i>	<i>Research in Motion</i>	<i>Zarlink</i>

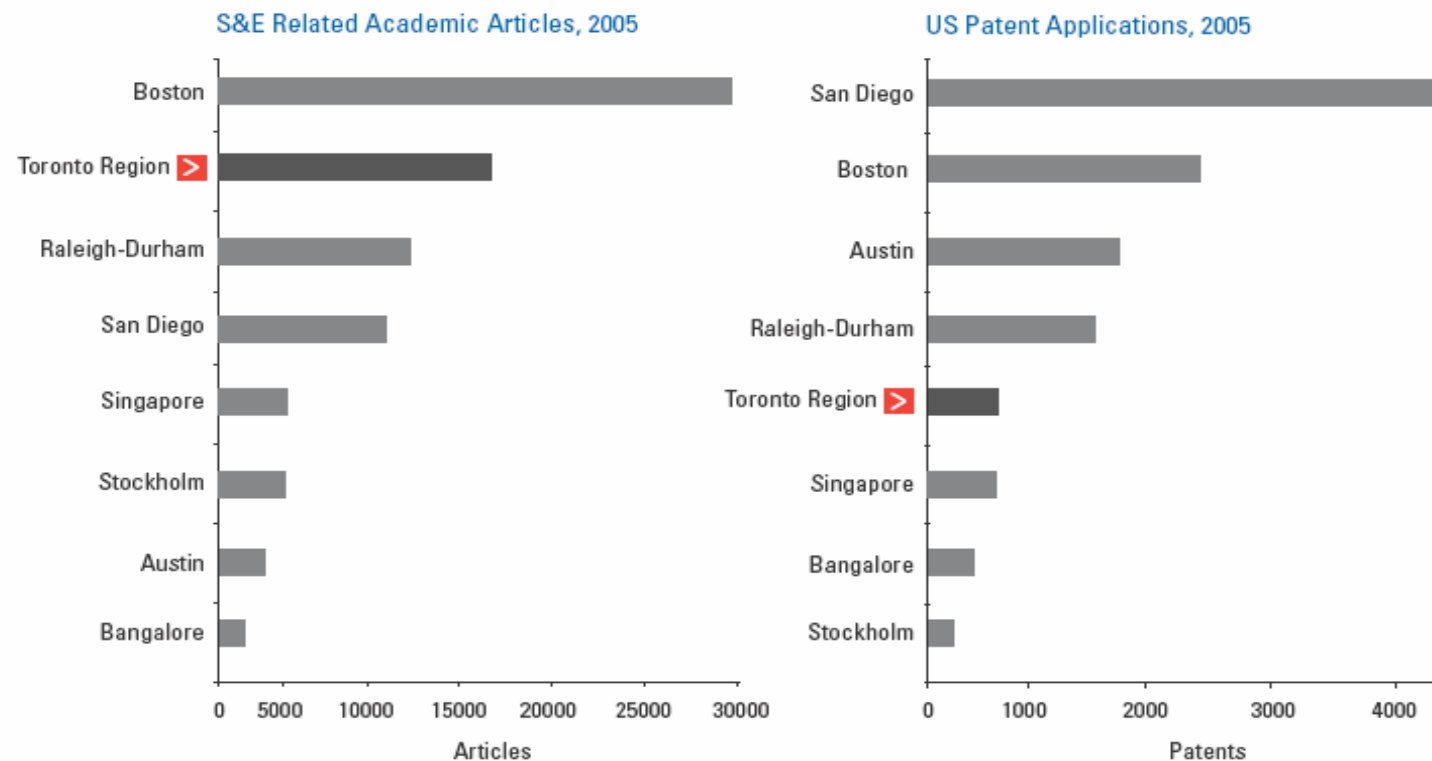
*Four Seasons will become foreign owned in 2007.
Source: Institute for Competitiveness & Prosperity analysis.

* Ian Austen, "Canada Wonders Why It's the Bought and Not the Buyer," *The New York Times*, October 24, 2006.

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Commercialization Gap

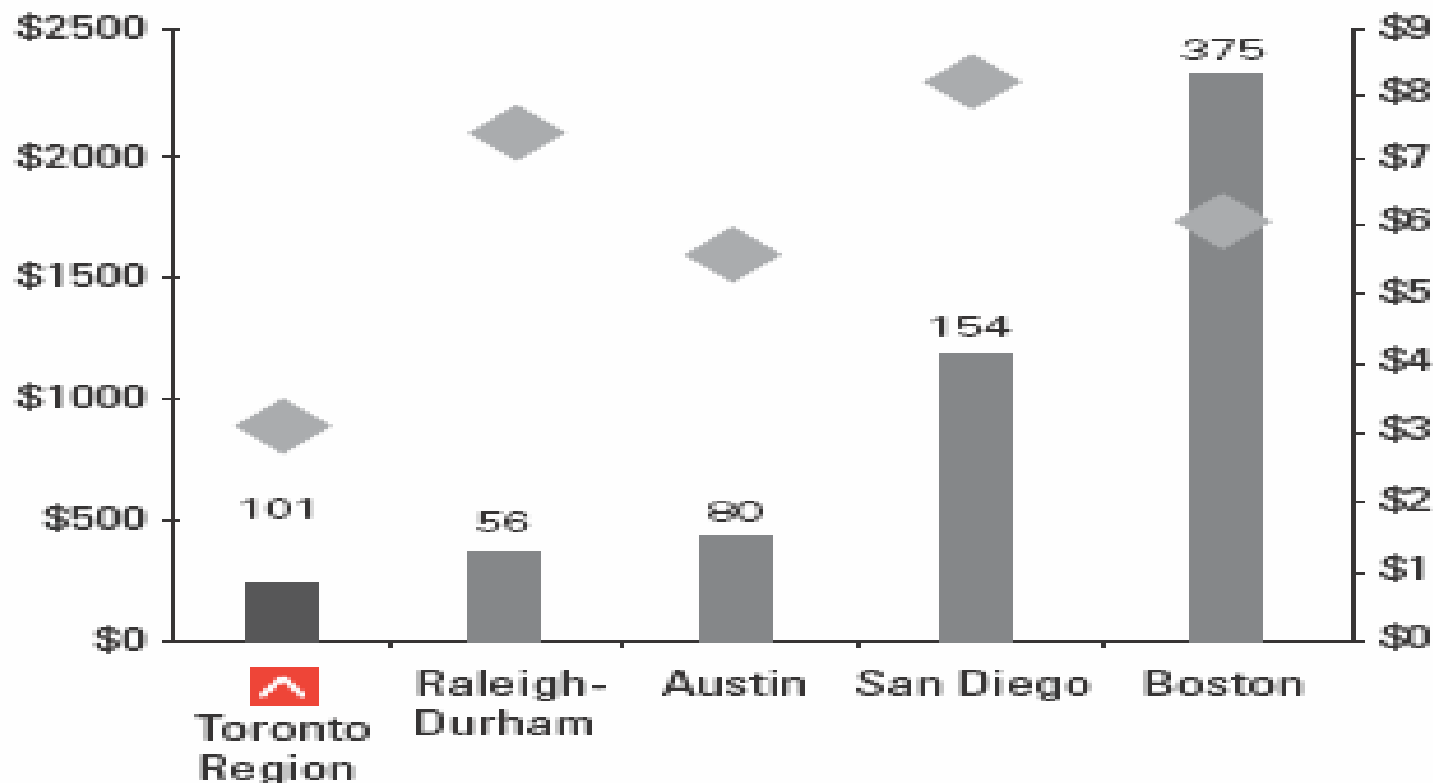


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Lower VC Investment

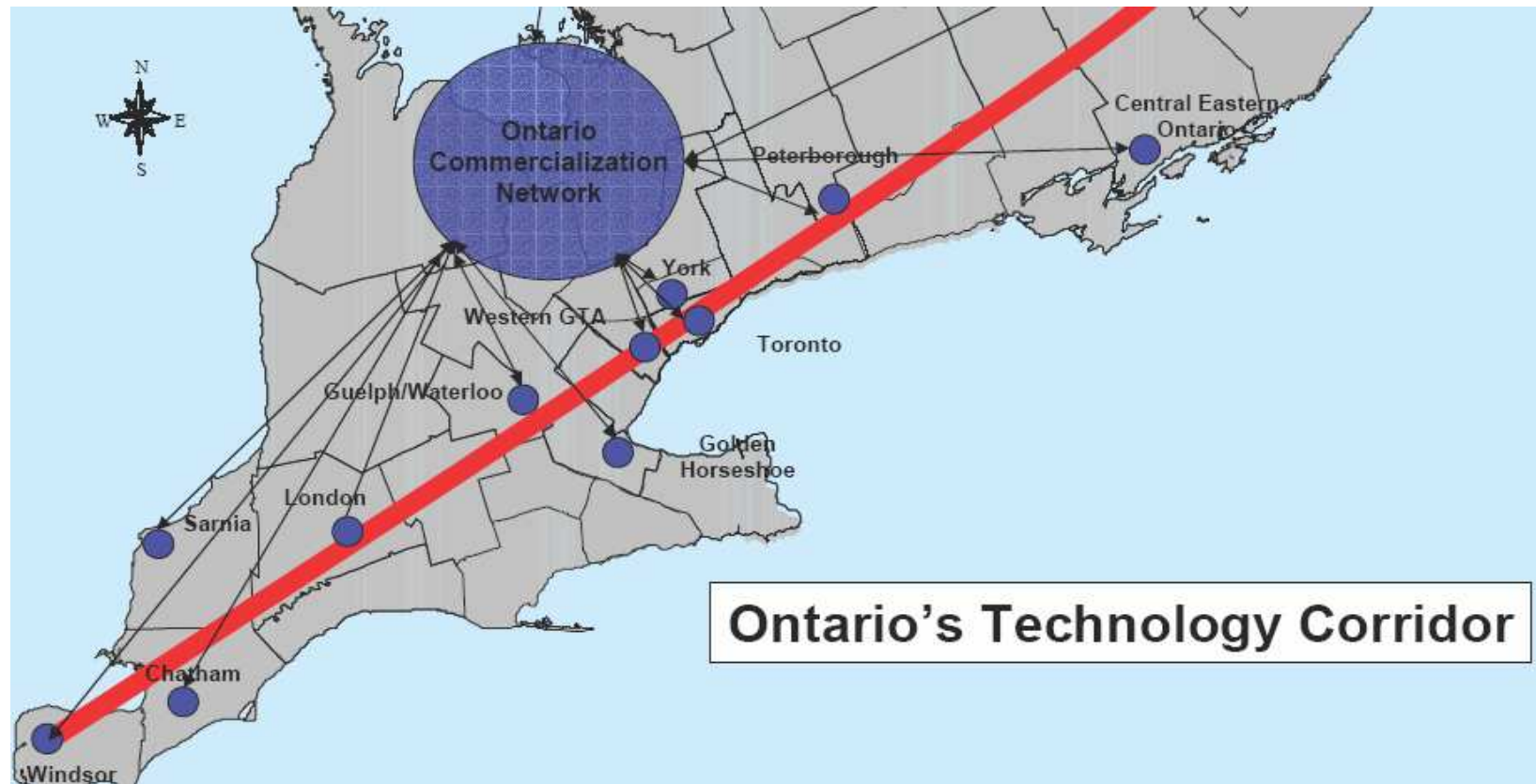
Venture Capital, 2005 (USD Millions)



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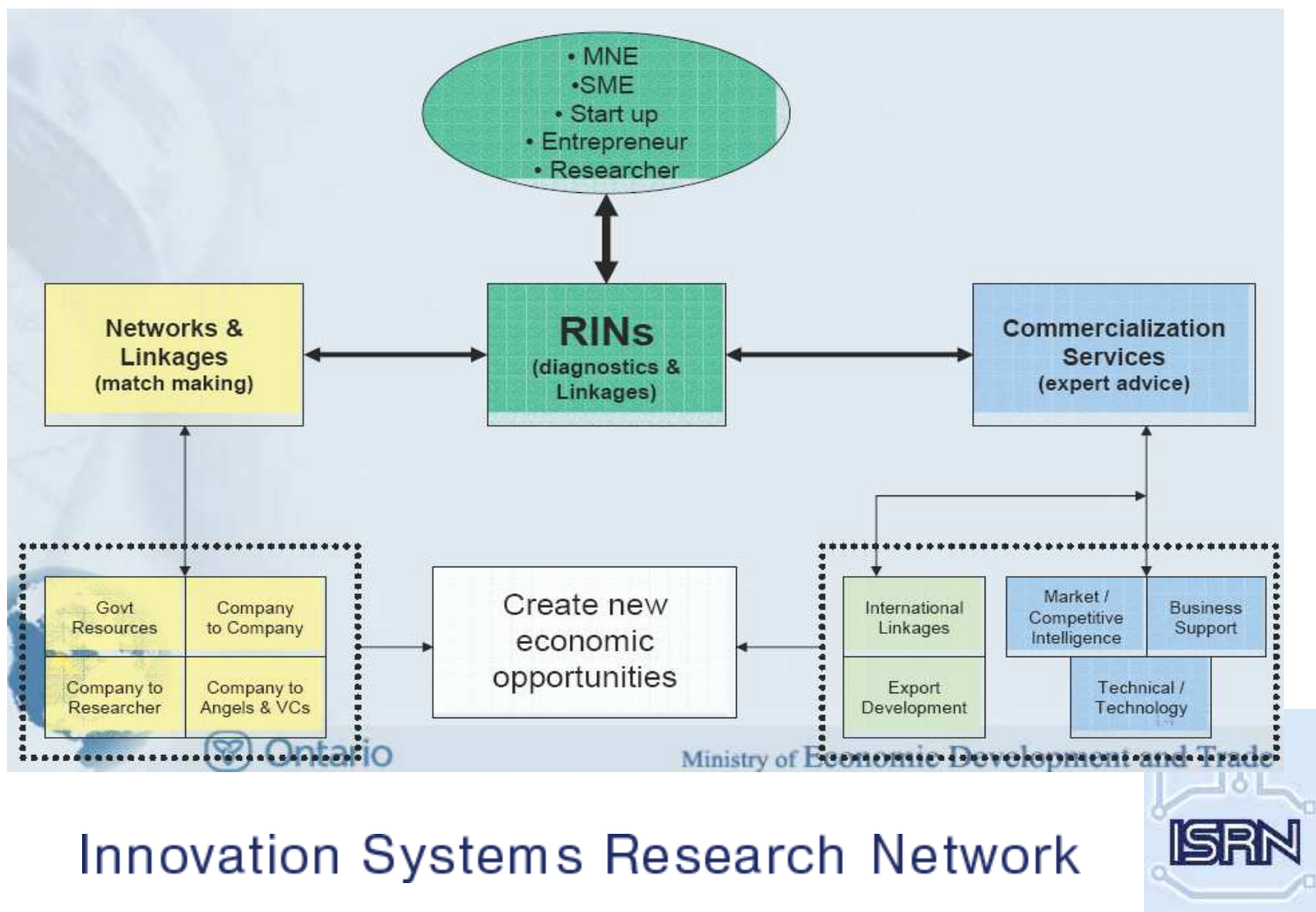
Solutions? – Regional Innovation Networks as Tools of Engagement



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RIN Structures





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