

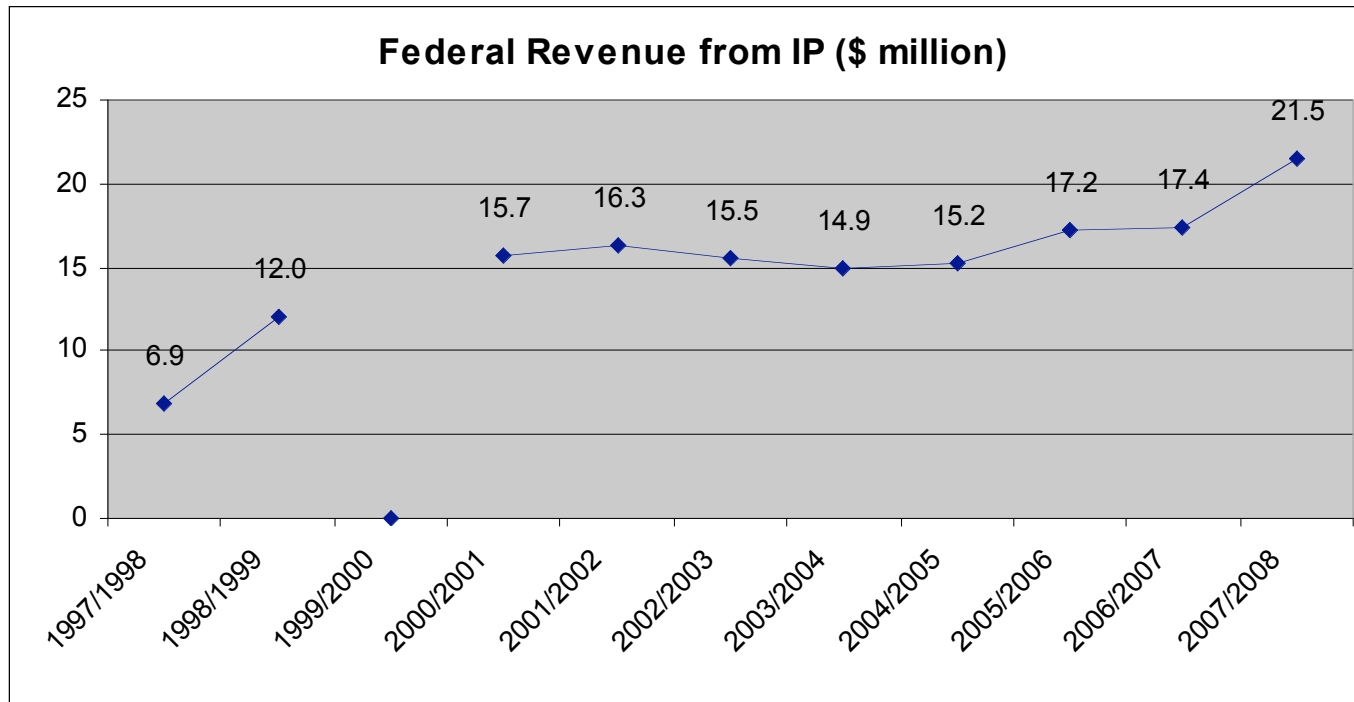
# Fostering Innovation: New Models for Public S&T

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# Fostering Innovation: A secondary objective of federal S&T

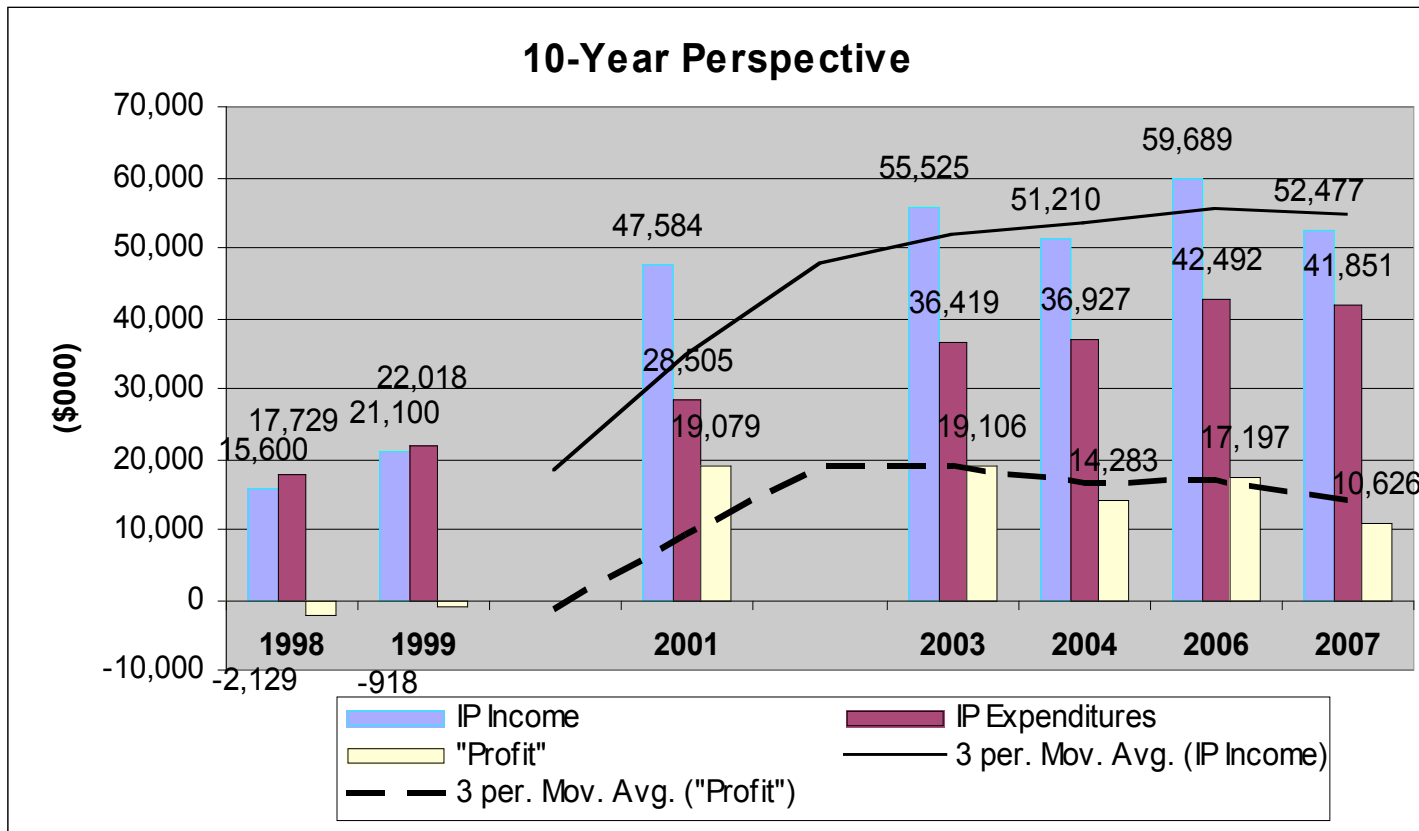
Federal science and technology spending by Socioeconomic Objective						
	2005/2006		2006/2007		2007/2008	
	Intramural	Extramural	Intramural	Extramural	Intramural	Extramural
	millions of dollars					
<b>Science and technology expenditures</b>	4,690	4,425	4,924	4,389	4,885	4,980
Exploration and exploitation of the Earth	448	101	441	74	441	91
Infrastructure and general planning of land use						
Transport	57	32	74	32	92	40
Telecommunication	130	33	139	33	152	38
Other	470	247	452	235	486	295
Control and care of the environment	470	247	452	235	486	295
Protection and improvement of human health	435	1,175	478	1,247	576	1,573
Production, distribution and rational use of energy	263	121	372	103	418	144
Agricultural production and technology						
Agriculture	413	114	440	142	440	185
Fishing	168	37	169	26	162	43
Forestry	95	56	93	87	88	90
<b>Industrial Production and Technology</b>	<b>296</b>	<b>958</b>	<b>291</b>	<b>883</b>	<b>297</b>	<b>936</b>
Social structures and relationships	1,021	336	1,097	348	974	377
Exploration and exploitation of space	176	168	178	183	132	211
Non-Oriented research	317	799	315	823	316	652
Other civil research	26	5	28	10	31	110
Defence	265	156	300	140	235	165
Other	17	56	...	...	...	...
1. Non-program (indirect costs) are excluded.						
2. Note(s): Due to rounding, components may not add to the totals						
Reference: <a href="http://www.statcan.gc.ca/pub/88-001-x/88-001-x2009006-eng.pdf">http://www.statcan.gc.ca/pub/88-001-x/88-001-x2009006-eng.pdf</a>						

# Federal IP Revenues: About 0.4% of intramural spending (2007/2008)

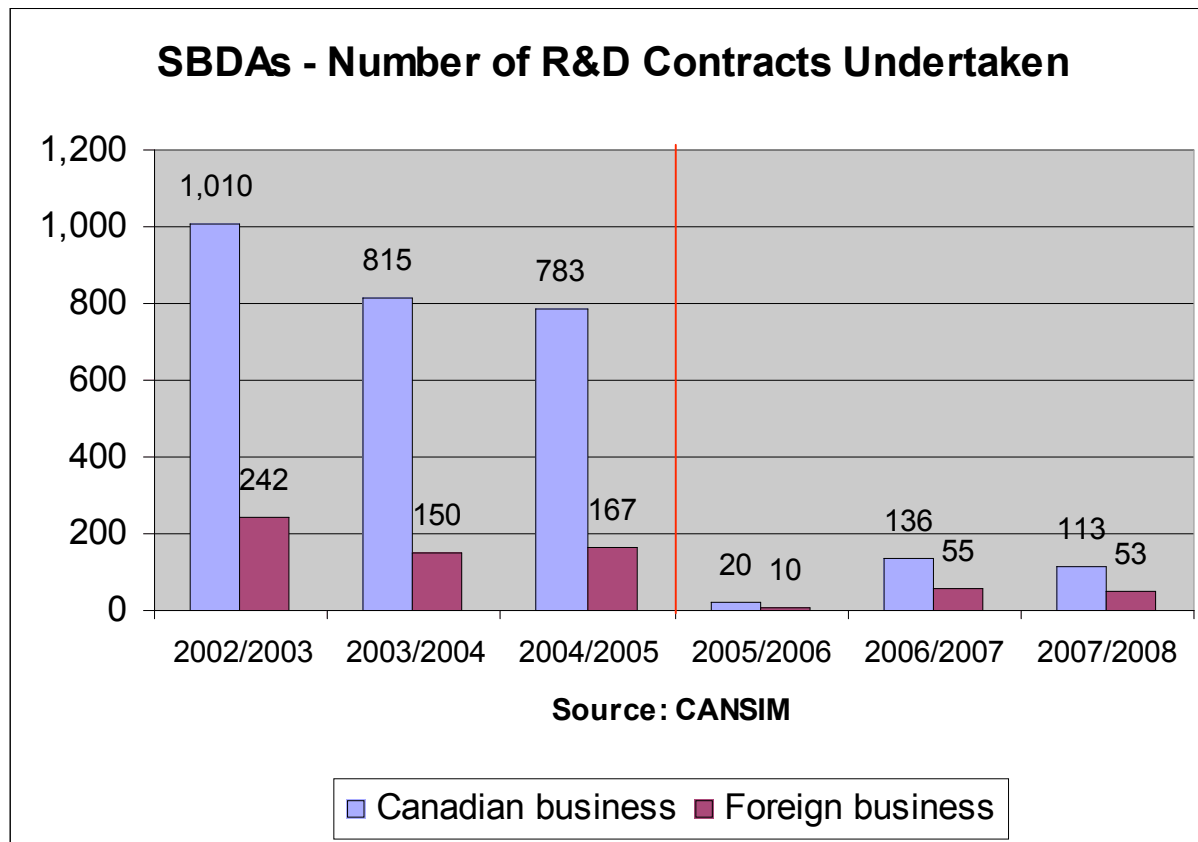


Source: CANSIM

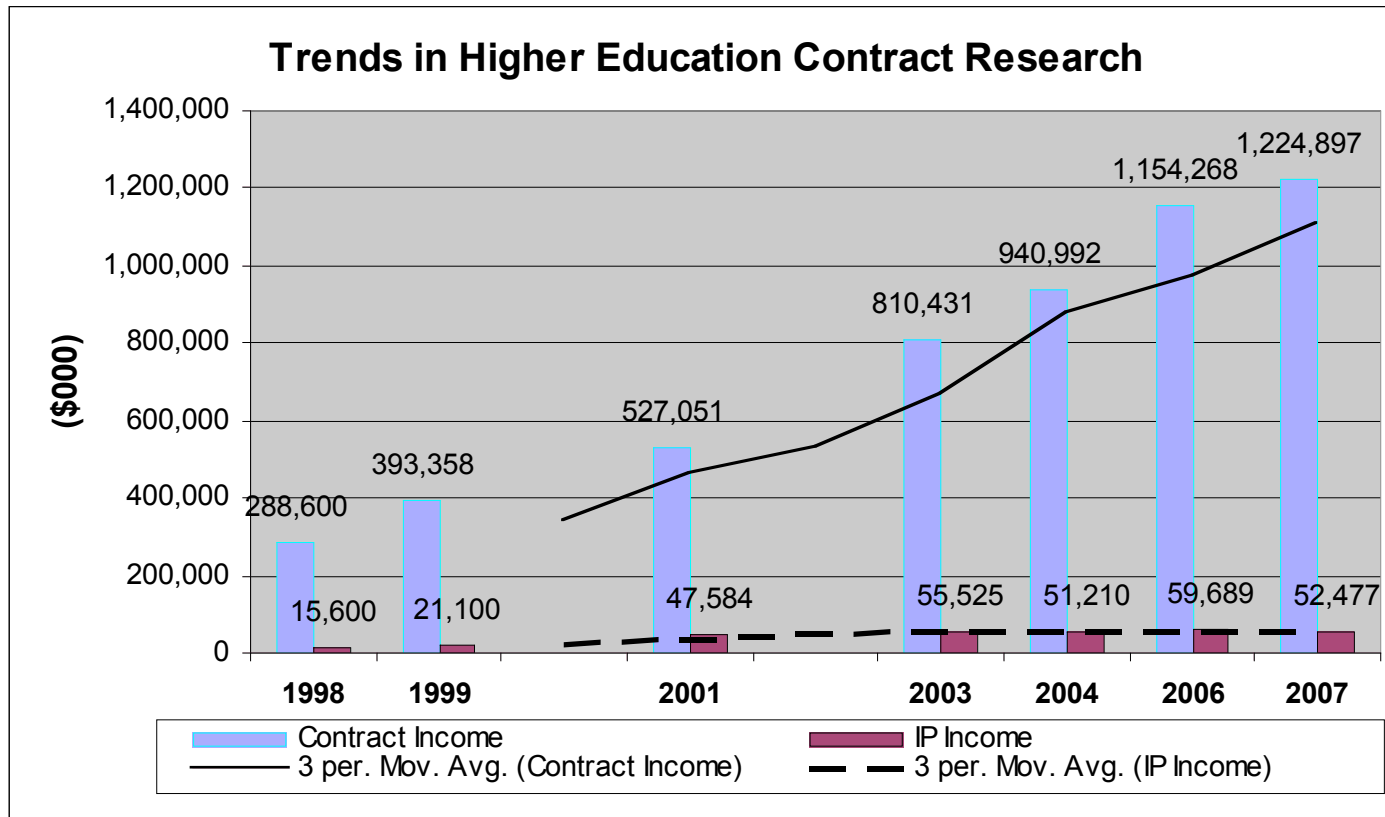
# University IP Revenue: About 0.9% of total research income



# SBDA Contracts Declining?



# University Research Contracts Growing Sharply



# Traditional innovation-support mechanisms

- Pre-competitive technology development
- Collaborative research & consortia
- IP Licensing
- Regulation
- Innovation-related networking
- Procurement
- Direct support of industrial research
- HQP training

# Observations

- The system is working “nominally”
  - Skilled federal FPTT workforce
  - Producing expected returns
- S&T for (industrial) innovation a secondary objective for most SBDAAs
  - Accounts for  $\approx 5\%$  of all intramural S&T spending
  - Largely a by-product of other “public good” S&T
- Innovation focus declining?
  - e.g. Research contracts
    - But, data are incomplete
- Diminished infrastructure investment in SBDAAs (compared with universities) reduces innovation role of federal labs



# Observations (cont'd)

- No strong policy direction for SBDA's
  - Government ambivalent about innovation role of SBDA's
    - Federal S&T strategy largely silent on SBDA role
- Conflicting policy objectives interfere with industrial innovation role
  - Revenue maximization versus impact on industry, economy
  - Inconsistent application of IP ownership policies
  - Start-stop lab privatization efforts
  - Statistical data inadequate to track activities, trends
- Emphasis almost exclusively on NSE, Health innovation and commercialization (i.e. goods)
  - Under-emphasis on SSHAD (i.e. services)

## Observations (cont'd)

- No momentum for change without:
  - New policy direction
  - New models of research and engagement
  - New metrics

# Moving Forward on Innovation: Everything old is new again !

- Success factors:
  - Infrastructure
  - Procurement
  - Direct support of R&D
  - Integration with national system of innovation
  - E.g. Collaborative research
  - Regulation
  - IP licensing
  - HQP training