UST 과학기술연합대학원대학교 UNIVERSITY OF SCIENCE & TECHNOLOGY

National R&D Data Management of Canada and Eastern European Countries

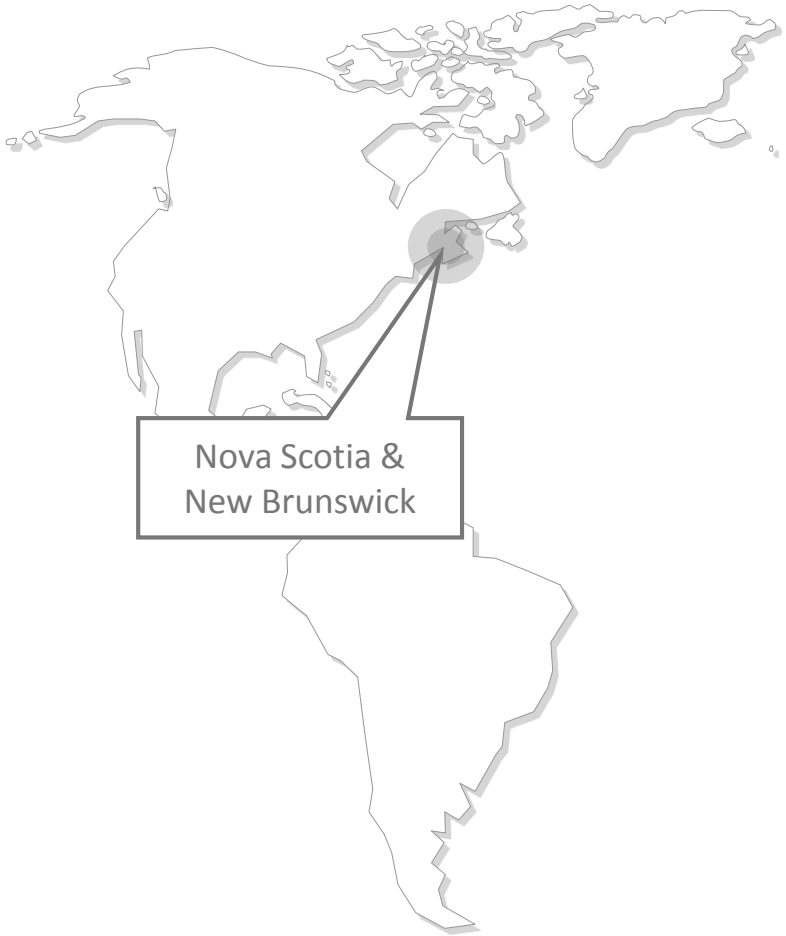
[redacted]

Table of Contents

01

Introduction

Personal Introduction



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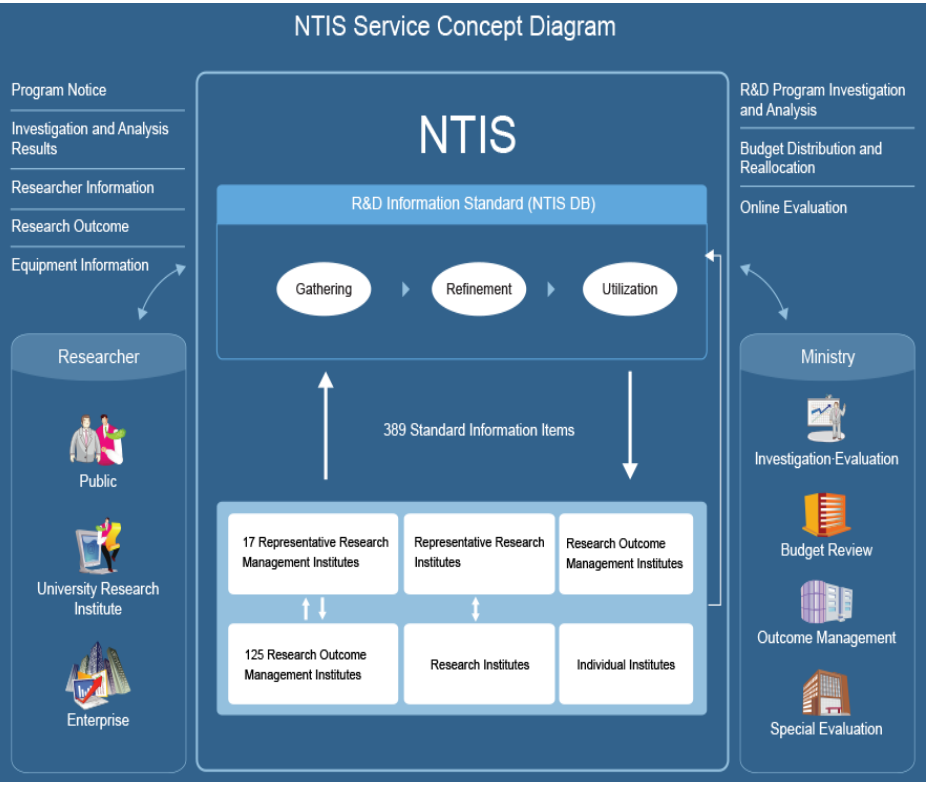
NTIS Introduction



National Science & Technology Information System

- National R&D Information portal providing government-funded R&D information
- Enhancement of the efficiency of national R&D investment and performance
  - National R&D Program management
  - National R&D Participation Information
  - National R&D Equipment/Facilities management
  - National R&D Outcome Information Service
- Beneficial system for public and private sector researchers and enterprises to easily access research data

Research Plan

❖ Original Research Plan

Contents	In detail, my program schedule consists of the following tasks: ● Research of CORDIS (EU R&D related). ● Research on countries that are in R&D cooperation with Eastern European countries. ● Research on current R&D progress of Netherland, Norway, and Spain. ● Research on current R&D progress of Eastern European countries Research, monitor and support Global NTIS Foreign Technology Transfer

As the internship progressed, my tasks have been modified:

- Research of current R&D Data management progress of Canada
- Select candidates for NTIS technology transfer service among Eastern European countries
- Research of current R&D management progress of Poland, Czech Republic, Bulgaria and Romania

Eastern Europe NTIS Technology Transfer Candidate Selection

글로벌 국가R&D정보 관리체계 동유럽 지역 기술이전 후보국 검토(20170727)

Section	Global Partnership with Korea			Innovation (Reference)(2016)		Economy Scale(2016)			R&D Statistics(2015)			Recommend
	KISTI MOU	KAIST GCC Membership	E-government Global Partnership	E-government Ranking A(<30) B(30-60) C(>60)	EU Membership	GDP (Million USD) A(>200) B(100-200) C(<100)	GDP/capita (USD) A(>10) B(>5) C(<5)	Population A(>20, B(5-10) C(<10)	R&D Expenditure A(>1.5%) B(1%-1.5%) C(<1%)	R&D Expenditure Amount (Million USD) (Reference) A(>10) B(1-10) C(<1)	R&D Researchers (2014) A(>50) B(10-50) C(<10)	
Central Europe												
Austria	2015(UGRAZ)	NO	NO	16	YES	386,430	44,561	8.5 million	3.069 % GDP	11,860	71,448 (2013)	
Slovenia	None	NO	NO	21	YES	43,990	21,370	2.1 million	2.212% GDP	973	12,155	
Poland	None	YES	YES	36	YES	469,510	12,309	38.5 million	1.004% GDP	4,714	115,375	1
Czech Republic	None	YES	NO	50	YES	192,920	18,326	10.5 million	1.947% GDP	3,756	54,493	1
Slovakia	None	NO	NO	67	YES	89,550	16,648	5.4 million	1.178% GDP	1,055	25,080	
Caucases												
Azerbaijan	None	YES	YES	56	NO	37,850	3,759	9.8 million				2
Former Soviet												
Kazakhstan	(NCSTE,NCST	YES	YES	33	NO	133,660	7,138	18 million				
Russia	2005(VINITI)	NO	NO	35	NO	1,283,200	8,838	143.5 million	1.132% GDP	14,526	891,135	
Belarus	2017(BELISA)	NO	YES	49	NO	47,430	5,092	9.5 million				2
Ukraine	None	NO	YES	62	NO	93,270	2,051	42.5 million				
South East Europe												
Serbia	None	NO	NO	39	NO	37,750	5,293	7 million				
Greece	None	YES	YES	43	YES	194,560	18,077	11.1 million	0.960% GDP	1,868	53,744 (2013)	
Bulgaria	None	YES	NO	52	YES	52,400	7,091	7.1 million	0.960% GDP	503	17,795	1
Turkey	None	NO	NO	68	NO	857,750	9,316	76.9 million	1.007% GDP	8,638	181,544	
Romania	None	YES	YES	75	YES	186,690	9,439	19.5 million	0.489% GDP	913	27,535	1

02

Poland

Introduction to Poland

Introduction to Poland

• Government

- Constitutional Republic
- Mixture of presidential and parliamentary model
- Prime Minister is running the administration.

• General Information

- Main Language is Polish
- 95% of population believes in Catholic Church.

• Political Standing

- Member of EU, NATO, UN, WTO, OECD and etc
- Strong allies with seven neighboring countries

• R&D Department

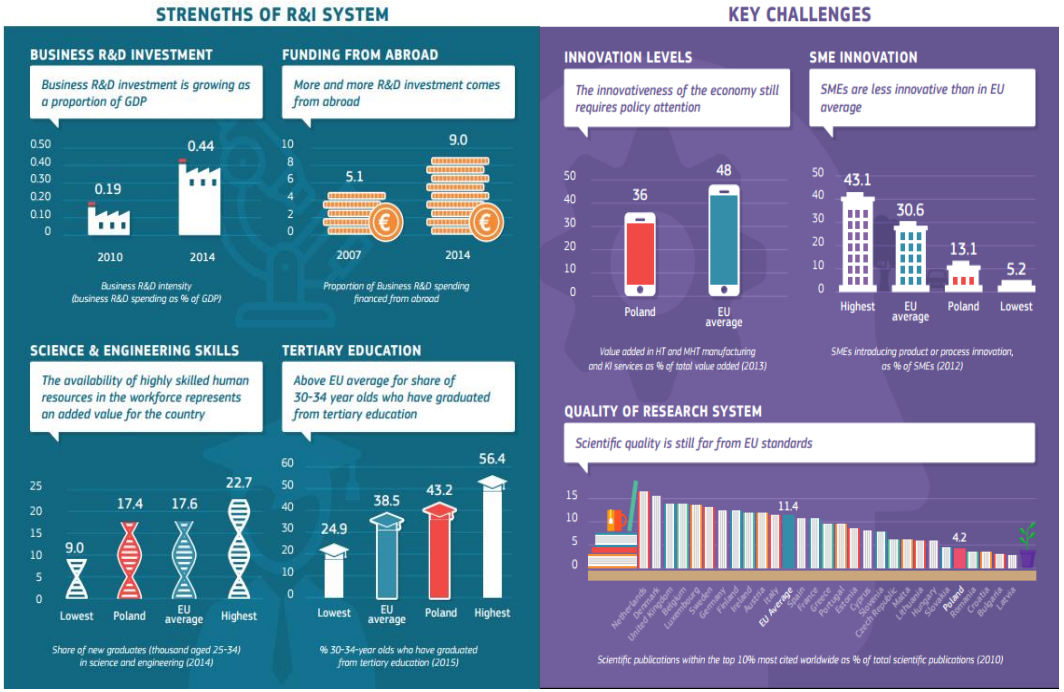
- Ministry of Science and Higher Education is in charge of R&D and S&T of Poland

Ministerstwo Nauki
i Szkolnictwa Wyższego

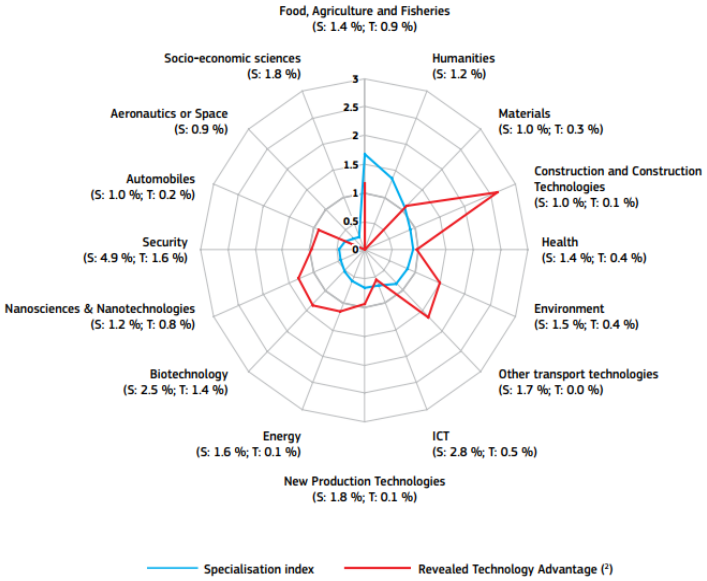
Poland R&D Status

Current R&D State of Poland

	Population (Million)	GDP (Million USD)	R&D Expenditure (Million USD)	R&D Researchers
Poland	38.5	469,510	4,714	115,375
Korea	50.4	1,411,246	58,313	675,360



Poland – S&T National Specialisation ([1]) in thematic priorities, 2000–2010
in brackets: growth rate in number of publications ([3]) (S) and in number of patents ([4]) (T)

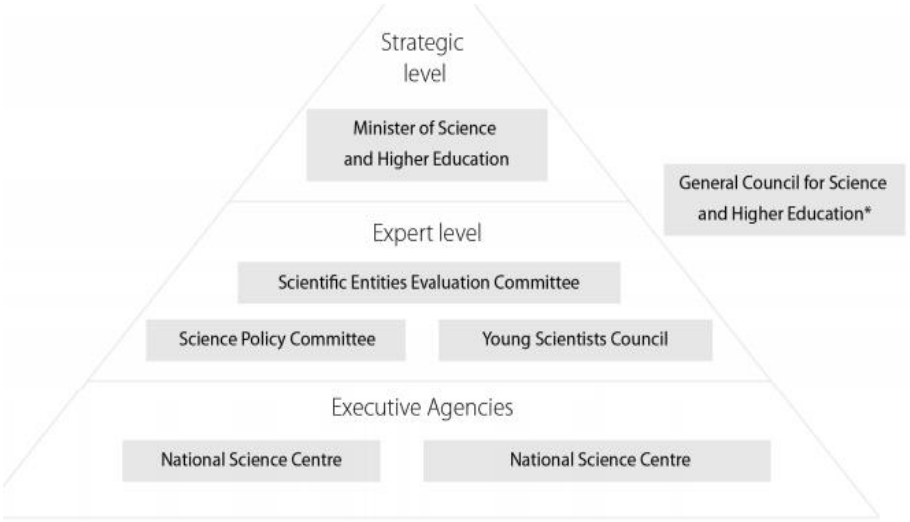


- Science Specialization
  - Agriculture and Fisheries
  - Humanities
  - Materials
- Technology Specialization
  - Construction
  - Transport
  - Nano-Science/Technology
  - Biotechnology

Poland R&D Policy

Reform of Science in Poland: Building on knowledge

The Ministry of Science and Higher Education prepared and implemented a reform that changes the functioning of transformation of scientific institutions to more modern and efficient research centers.



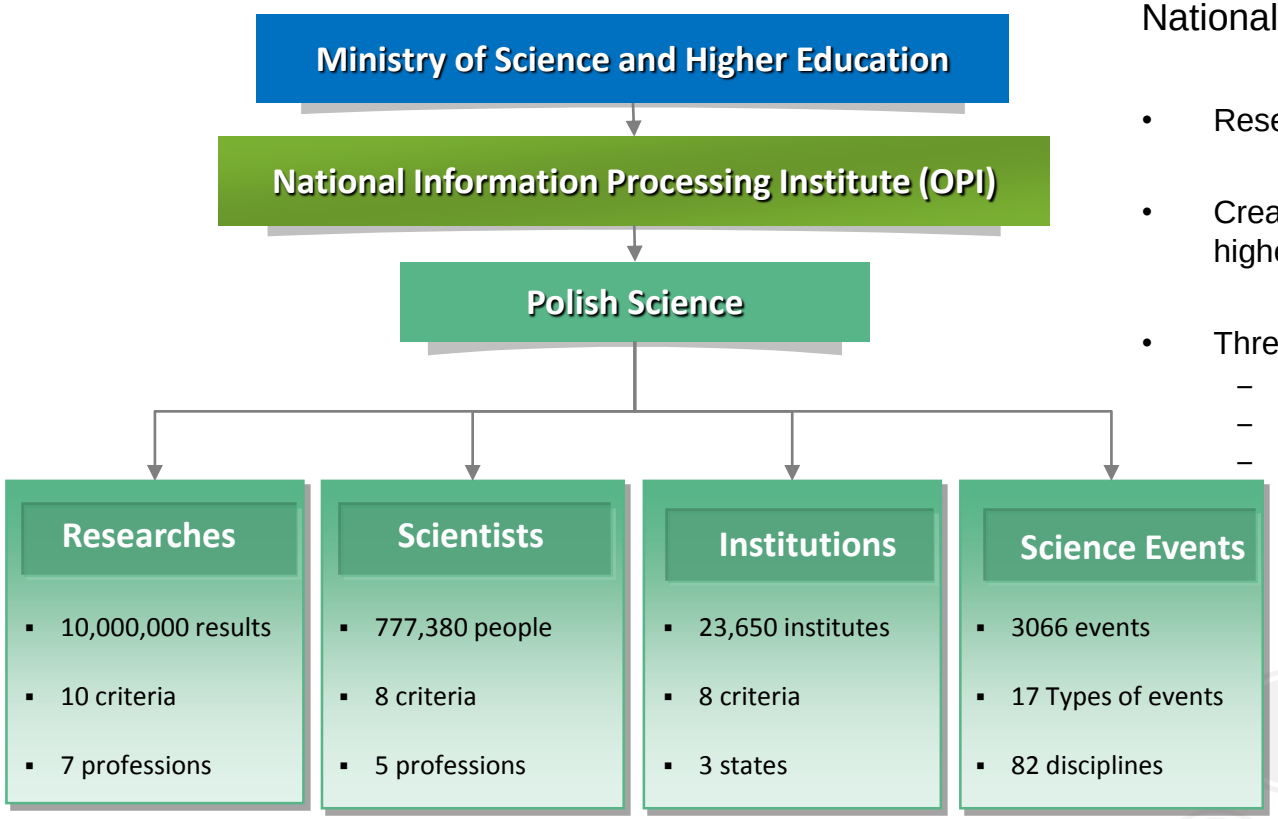
*General Council for Science and Higher Education will be constituted after 10th October 2011, when the new Act on Higher Education comes into force.

- Funds allocated by Scientific Authorities
- Strategic Division of S&T Institutes
- Division of Funds by Competition
- Efficient and Qualitative Research

Poland R&D Database

Current state of Poland R&D Data Management

National Information Processing Institute (OPI) manages S&T and R&D data of Poland under the Ministry of Science and Higher Education. Results of their research and database are crucial for the Ministry to strategize their R&D, S&T budget.



National Information Processing Institute (OPI)

- Research on Polish scientific development
- Create complex IT system for science and higher education
- Three databases
  - Polish Science Database
  - Research Equipment Database
  - Polish Higher Education Information System

OPI
NATIONAL INFORMATION PROCESSING INSTITUTE

03

Czech Republic

Introduction to Czech Republic

Introduction to Czech Republic

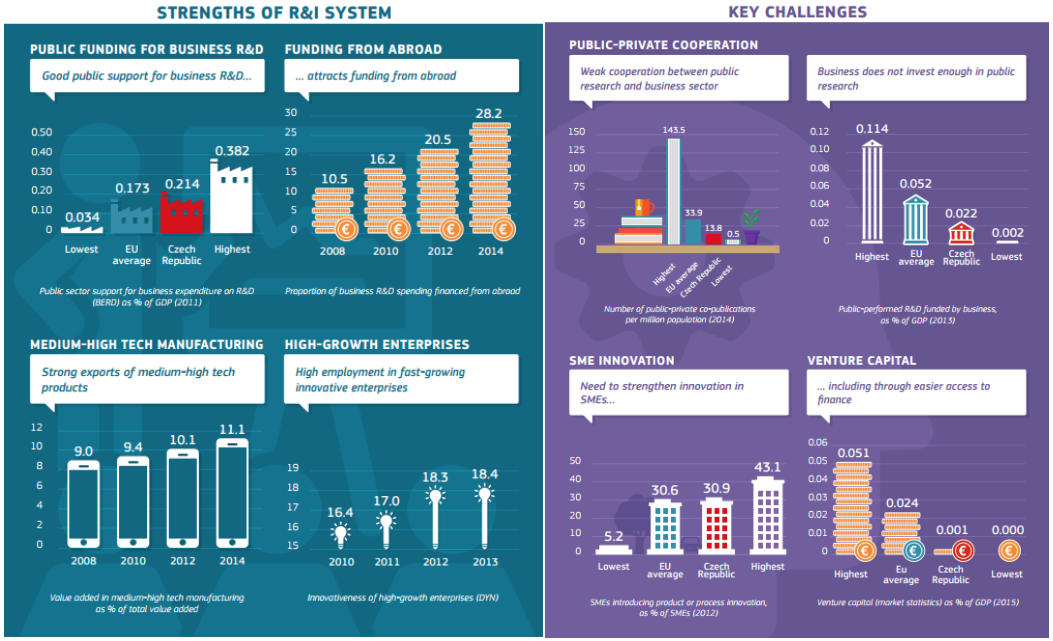
- **Government**
  - Parliamentary System
  - House of Commons and Senate
- **General Information**
  - Main Language is Czech
  - 86.7% of population non-religioius

- **Political Standing**
  - Member of EU, NATO, UN, OECD and etc
  - Strong allies with Slovakia, Poland and Hungary
- **R&D Department**
  - Ministry of Education, Youth and Sports is in charge of R&D and S&T of Poland

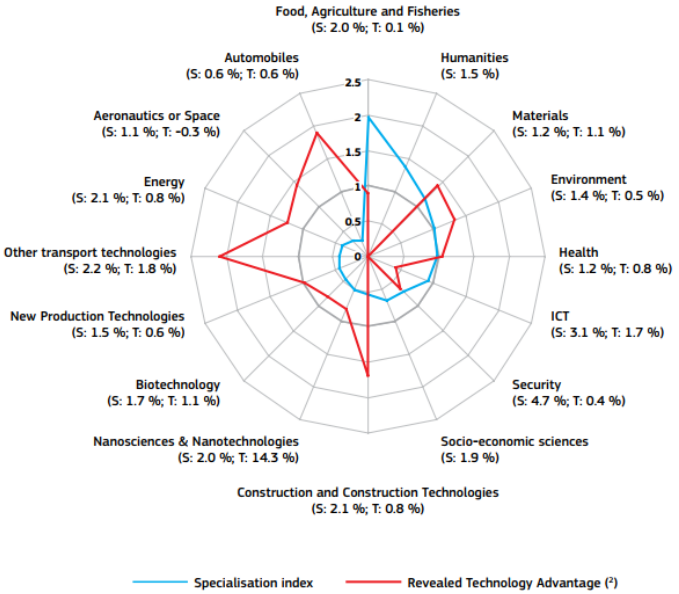
Czech R&D Status

Current State of Czech R&D

	Population (Million)	GDP (Million USD)	R&D Expenditure (Million USD)	R&D Researchers
Czech	10.5	192,920	3,756	54,493
Korea	50.4	1,411,246	58,313	675,360



Czech Republic – S&T National Specialisation (1) in thematic priorities, 2000–2010
in brackets: growth rate in number of publications (3) (S) and in number of patents (4) (T)



- Science Specialization
  - Agriculture and Fisheries
  - Environment
  - Health
- Technology Specialization
  - Automobiles
  - Transportation Technology
  - Construction Technology
  - Health

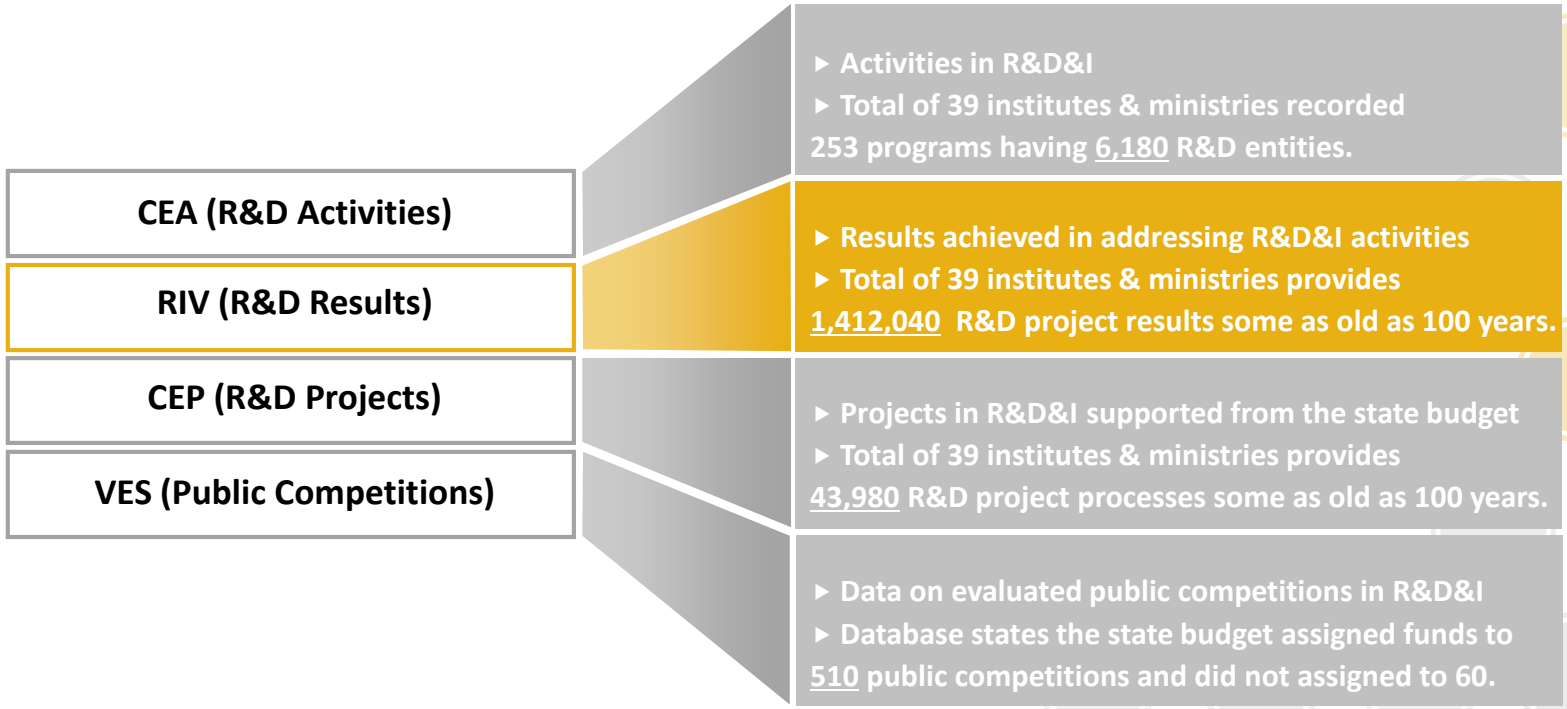
Czech R&D Policy

- **National Policy for Research, Development and Innovation for 2016-2020**

Czech R&D Database

Information System for Research, Experimental Development and Innovation

This R&D data repository is operating under Research, Development and Innovation Council to create a database where anyone can access R&D&I data which is supported by public funds of the Czech Republic.

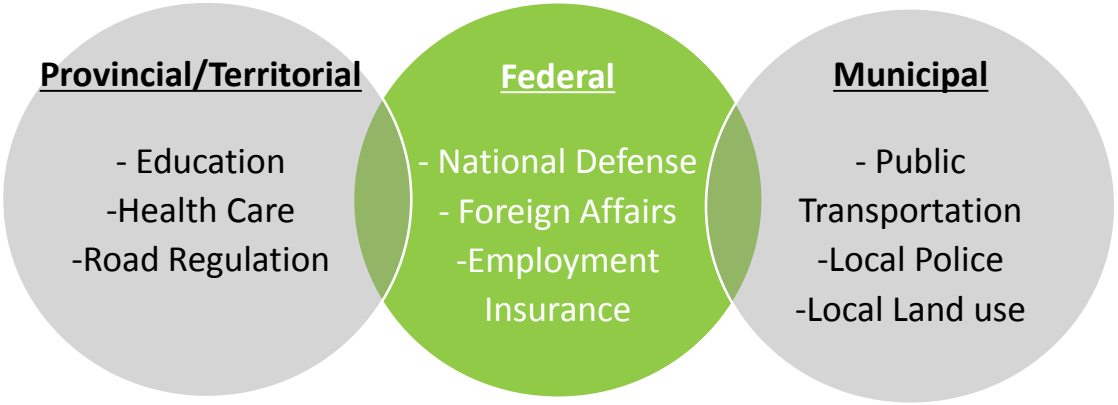


04

Canada

Introduction to Canada

Government Structure of Canada



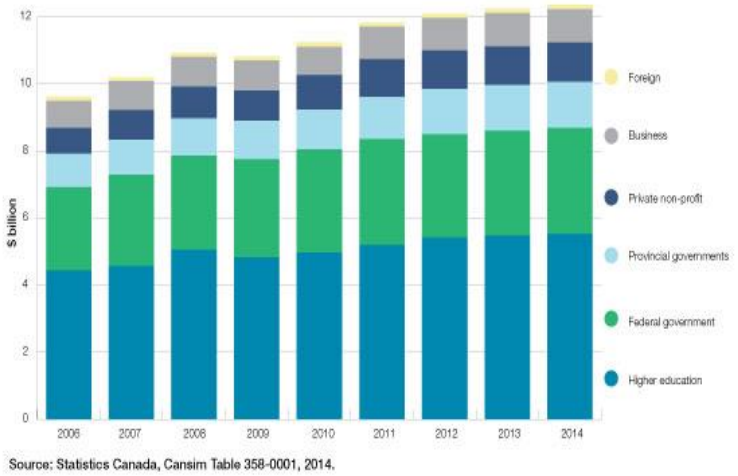
- Constitutional Monarchy
- Parliament
  - The Sovereign
  - The Senate
  - The House of Commons
- Election
  - Political Representatives to the Federal House of Commons
  - The provincial and territorial legislatures
  - City council

Canada's Global Relationship

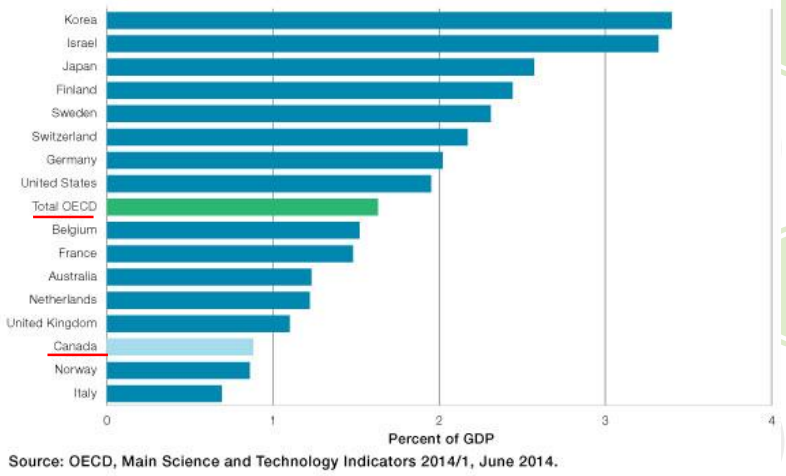
- Famously known for peace-keeping
- Strong allies with United States
- Member of many global organizations:
  - Commonwealth of Nations
  - NATO
  - OECD
  - United Nations
  - etc

Canada R&D Status

Current State of Canada's Research and Development



Source: Statistics Canada, Cansim Table 358-0001, 2014.



Source: OECD, Main Science and Technology Indicators 2014/1, June 2014.

- R&D Expenditure of Canada (2014)

  1. Higher Education

  2. Federal Government

  3. Provincial Government

Comparison of Korea and Canada

	Population	GDP per capita	R&D Expenditure	Researchers
Canada	35.5 (Million)	44,025 (US$)	24,885 (Million US$)	313,110
Korea	50.4 (Million)	35,921 (US$)	58,313 (Million US$)	675,360

Canada R&D Policy

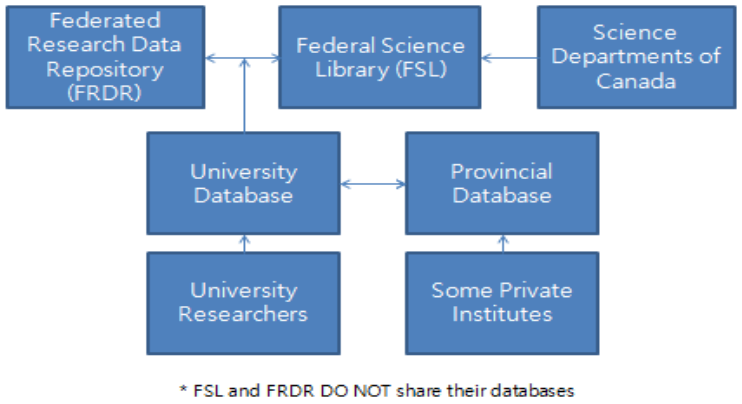
Seizing Canada's Moment: Moving Forward in Science, Technology and Innovation

Seizing Canada's Moment strategy builds upon the 2007 strategy, keeping same core principles but add more to them. In the 2014 strategy, Canada will be retaining People and Knowledge pillars but enhance and braodens the Innovation pillar.

- Promoting World-Leading Excellence
  - Strengthen policies and programs to inspire and assist Canadians
  - Create an environment of healthy competition
- Focusing on Priorities
  - Efficient target funding strategy in areas of opportunity
- Encouraging Partnerships
  - Support science and technology collaboration and align the roles and responsibilities of the federal public sector with the private sector
- Enhancing Accountability
  - People Pillar
  - Knowledge Pillar
  - Innovation Pillar

Canada R&D Database

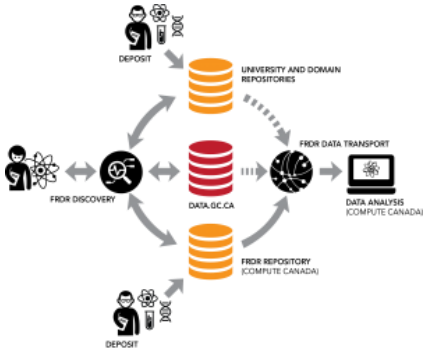
Federal Science Library and Federated Research Data Repository



* FSL and FRDR DO NOT share their databases

- Federal Science Library (FSL)
  - University Database (UD)
  - Science Departments of Canada
- Only abstracts from UD sent to FSL

  = Inefficient usage of R&D Data



compute canada | calcul canada

- Federated Research Data Repository
  - Under development (Beta test started)
  - Canadian Association of Research Libraries
  - Compute Canada
- 200 experts, 37 partner universities and research institutes
- Features
  - Data repository (Globus)
  - Preservation pipeline (Archivematica)
  - Discovery engine

5. Conclusion

My impression on this internship

- Great experience and lessons to learn from business culture of Korea.
- Re-evaluated this internship and UST for giving me this opportunity.
- Reconsidered the possibility of becoming a UST student in future.
- Very Honored to represent UST and other interns in YTN interview and nominated to be the best UST intern this year.

Future Plans for this research

- If the researched countries are suitable, KISTI will start a technology transfer project.

Future Plans for myself

- Back to Canada! (Aug. 28th)
- Study hard.
- Do well on job competition in the winter semester

Thank You!

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