

# Getting at Outcomes from Public Funding of Research & Research Infrastructure in Canada

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⋮ **Research builds communities**  
⋮ **La recherche au service des collectivités**  
⋮

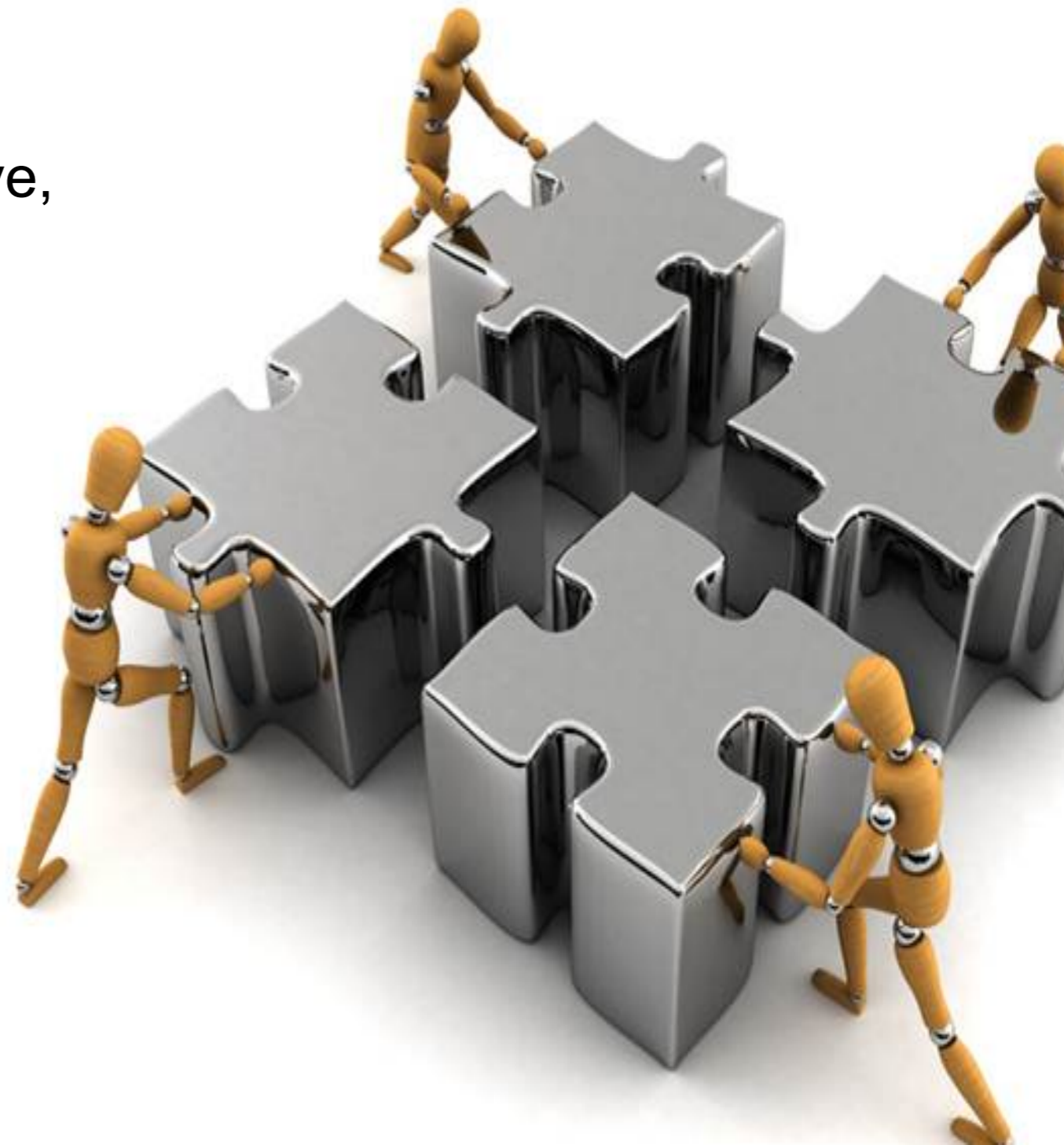
# PRESENTATION OVERVIEW

- S&T in Canada
- The CFI
- Accountability & Impact
- Outcome Measurement Studies
- Platform Outcome Measurement Studies
- Socio-economic Impact Assessment
- Next steps

# Canada's S&T **Strategy**:

*Mobilizing Science and Technology to Canada's Advantage*

- Released in 2007, with a Progress Report in 2009
- Intended to provide “a comprehensive, multi-year science and technology agenda”.
- Overall focus on increasing “private sector commitment to R&D”, maintaining “world-class research excellence” and developing Canada as a “magnet for talent”.



# Government of Canada S&T Strategy

## *Priority Areas*

- Environmental science and technologies
- Natural resources and energy
- Health and related life sciences and technologies
- Information and communications technologies



# Canadian R&D **Players**

## **Sources of Funding**

- Federal Government
- Provincial Government
- Universities and Colleges
- Private Not-for-Profit
- Foreign
- Business

## **Performers of R&D**

- Federal Government
- Provincial Government
- Universities and Colleges
- Business

**\$29,931 million in 2011**

# Federal research **funding**

SSHRC  CRSH



**INNOVATION.CA**  
CANADA FOUNDATION FOR INNOVATION | FONDATION CANADIENNE POUR L'INNOVATION



# The Canada Foundation for **Innovation**

Created by the Government of Canada in 1997, the Canada Foundation for Innovation (CFI) has a legislated mandate to build our nation's capacity to undertake world-class research and technology development that benefits Canadians.

The CFI fulfills this mandate by investing in the research infrastructure necessary for Canada's leading researchers to discover, develop and apply new knowledge in all areas of science, the humanities, health, engineering and the environment.

# A Unique Funding Model

- Provides 40% of infrastructure costs (with remainder provided by provinces, institutions and private sector);
- Supports all areas of research;
- Awards based on merit and excellence.





# The CFI Mandate

Enhance the capacity of ultimate recipients to:

- attract and retain the world's top research talent;
- enable researchers to undertake world-class research and technology development that lead to social, economic and environmental benefits for Canada;
- support private sector innovation and commercialization; and
- train the next generation of researchers.



# Accountability **Context**

- Global question of how to measure and report the impact of R&D expenditures
- Need for accountability to the Board, the government and Canadians
  - performance measurement and evaluation activities help demonstrate internal and external accountability for the stewardship of public funds by showing that management is fiscally responsible, that services are being delivered in an efficient and effective manner, and that objectives are being met
  - The CFI's Funding Agreement requires that the CFI carry out an overall performance evaluation of its activities and funded projects at least every five years, as well as a value-for-money audit

# Evaluation Approach

A suite of tools to capture the progress and results of CFI and CFI-funding;

## Organizational level

- corporate performance metrics
- program evaluation

## Project level

- application data, progress reports, financial reports

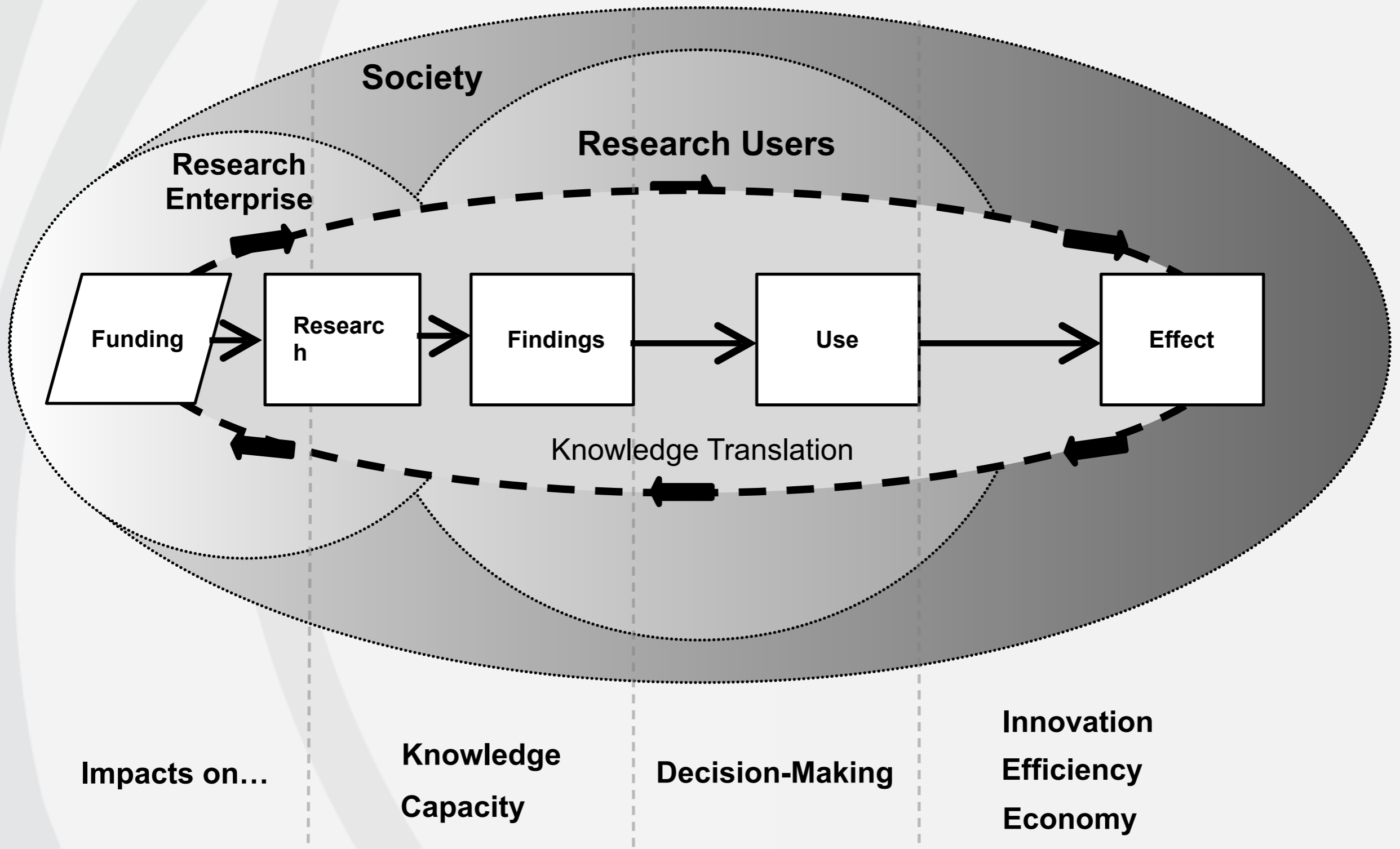
## Institutional level

- Outcome measurement studies (OMS)
- Institutional reports

## Beyond an Institutional level

- Platform outcome measurement studies (POMS)
- Special studies & evaluations

# Simplified **conceptual model** of research impact



# Outcome Measurement **Studies**

*INTENT: To document the extent to which investments made by the CFI and partner organizations have been important to researchers, research institutions, external user organizations, and Canada as a whole.*

- In 2006, the CFI began work to address the challenge of demonstrating impact
- The design process was guided by a Steering Group and a Stakeholder Advisory Network.
- global (across all programs) but granular (at the institutional and thematic level).
- address information gap identified by the Board, and provide indications if the CFI is meeting its mandate

# Outcome Measurement **Studies**



## Why?

- Respond to increasing demands for accountability and to monitor performance from the CFI Board and management, as well as other stakeholders
- Need for a more inclusive approach to measure the CFI's progress against its key objectives
- Get a complete understanding of the impact of CFI investments at the institutional and national levels

# OMS Approach

**Unit of analysis**

**One theme within an institution**

**Method**

**Case study**

**Validation**

**International expert panel**

**Strengths**

**Combines before & after  
Qualitative and quantitative  
Reveals unexpected outcomes  
Identification of success stories**

**Limitations**

**Burden on institutions  
Challenge of extrapolating findings  
Attribution and R&D time lag**

# OMS Categories

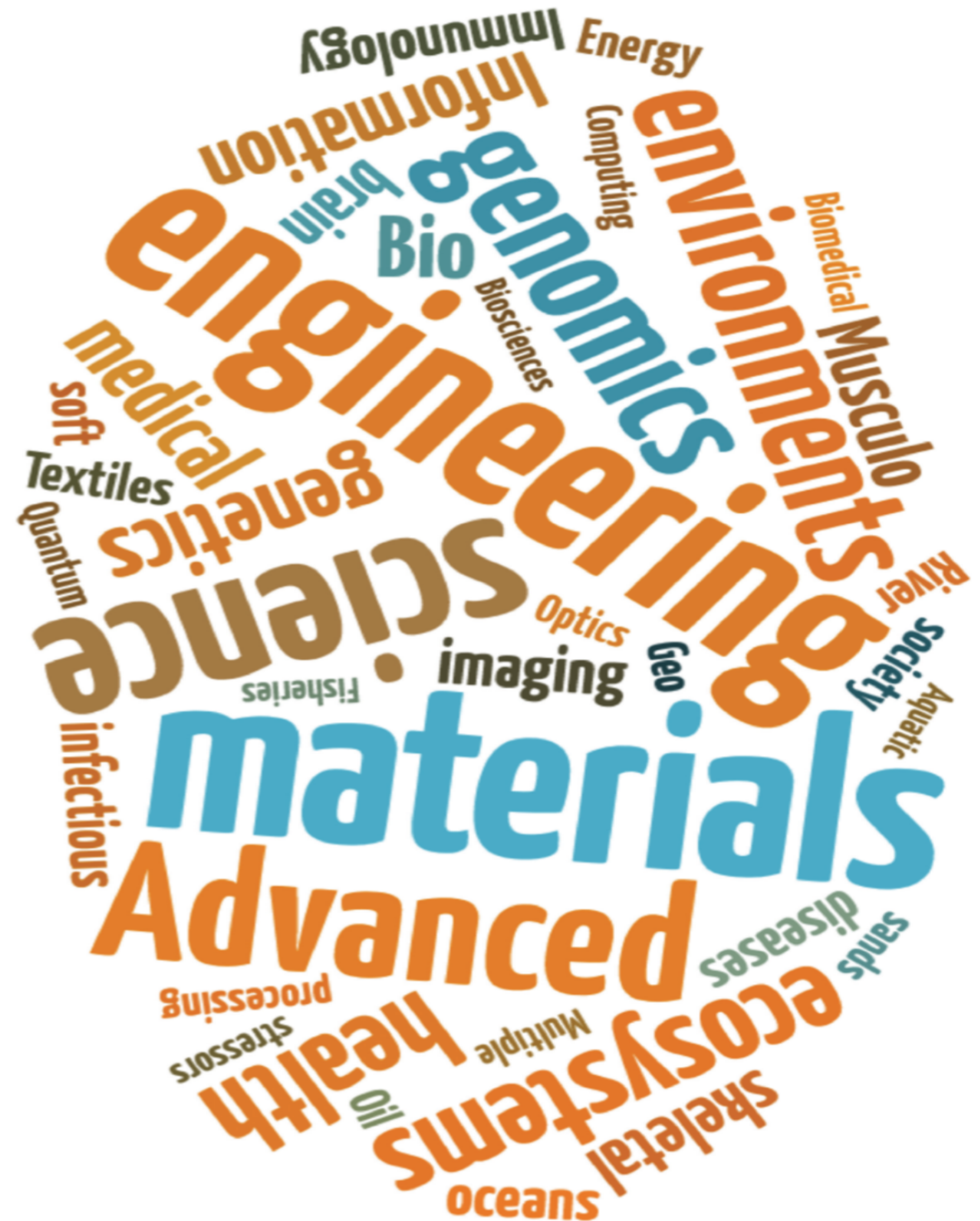
- Strategic research planning (SRP)
- Research Capacity
- Highly Qualified Personnel (HQP)
- Research productivity
- Innovation / Extrinsic Benefits





# OMS EXPERIENCE

- 28 (3 of which were pilots) OMS competed between 2007-2012
- Summary report
- Evaluation of the OMS approach



# PLATFORM OMS

## Examples

Canadian Light Source

Compute Canada

Canadian Research Knowledge Network (CRKN)

ONC (CECR)

Amundsen (an important component of the ArticNet NCE)

Toronto Centre for Phenogenomics

## Why?

- Sizeable investments by CFI in platforms
- Main features of research platforms:
- Long lifetimes
- Unique capabilities
- From big science facilities to distributed resources
- National and international users
- Customized governance structure

# POMS Features

- OMS as a blueprint
- Holistic view of platform activities
- Contextualized approach structured around 4 categories:
  - Governance
  - Capacity
  - Research
  - Innovation
- Customization and partnership
- External chair and 4 member expert panel

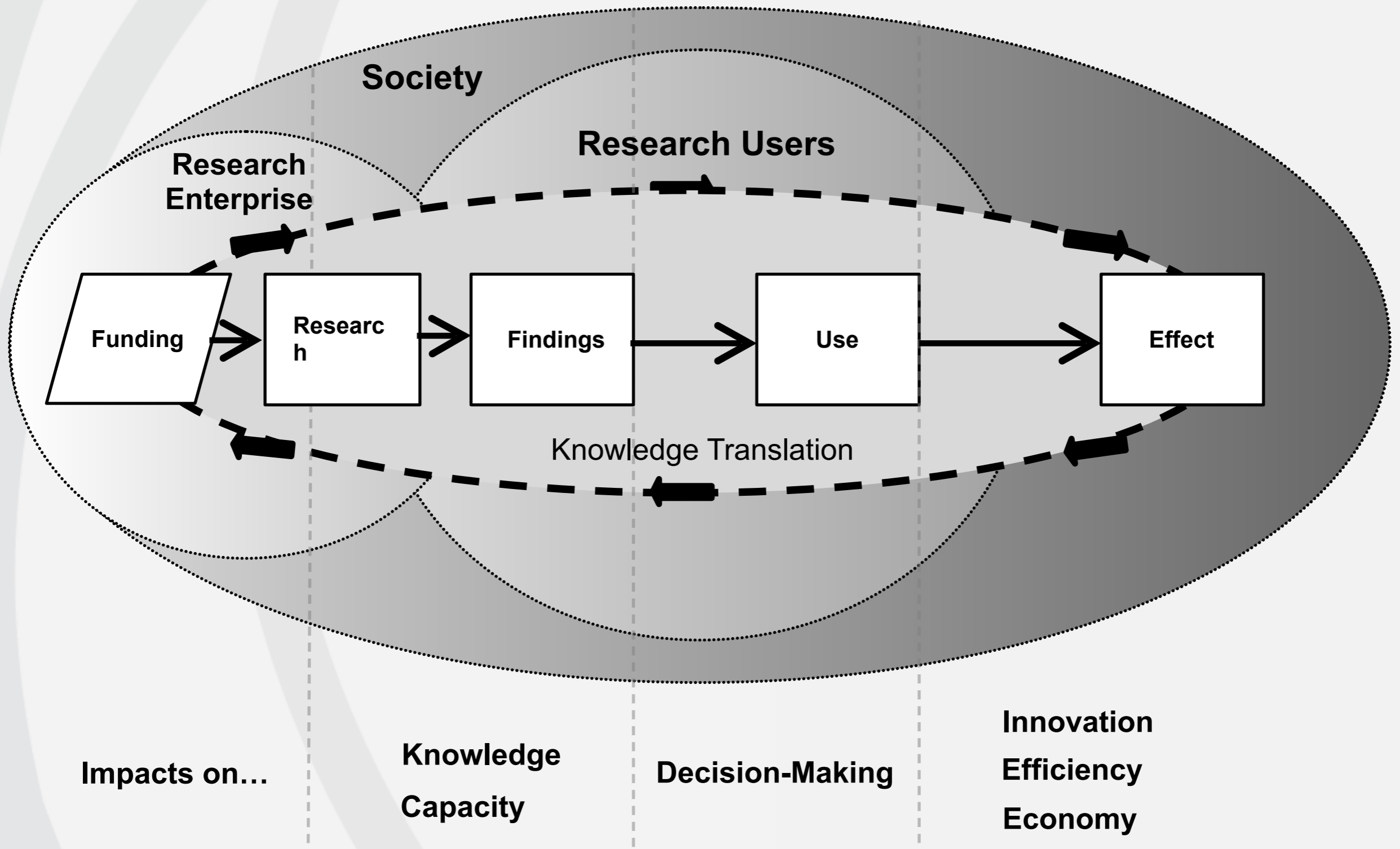


# POMS EXPERIENCE



- Under development since early 2011
- CRKN's draft report received Mid November
- POMS meeting in Ottawa December 4th 2012.
- Expert panel report expected March 2012

# Simplified **conceptual model** of research impact



# Socio-economic **Assessment**

## Why?

- ... to quantify the benefits that have accrued to society from public funding of physical research infrastructure (CFI) and research projects (CIHR).



# SEIA Features

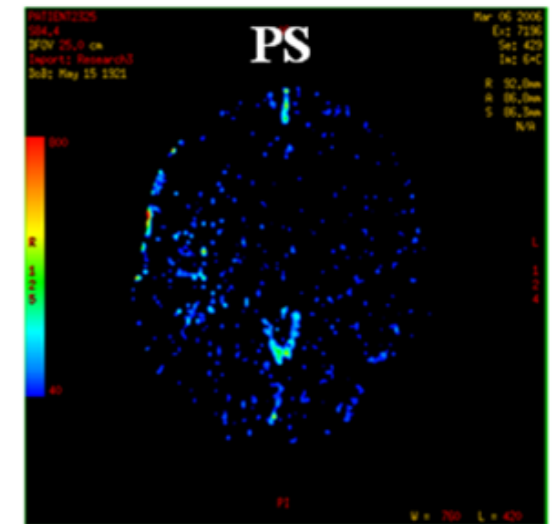
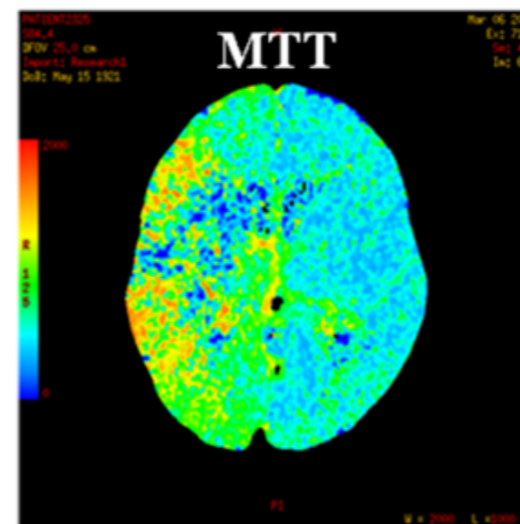
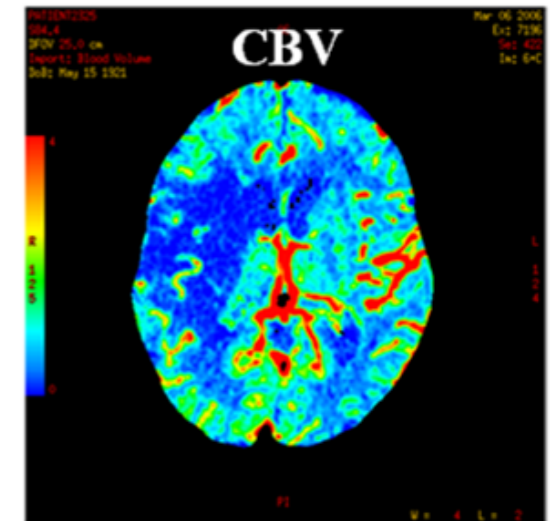
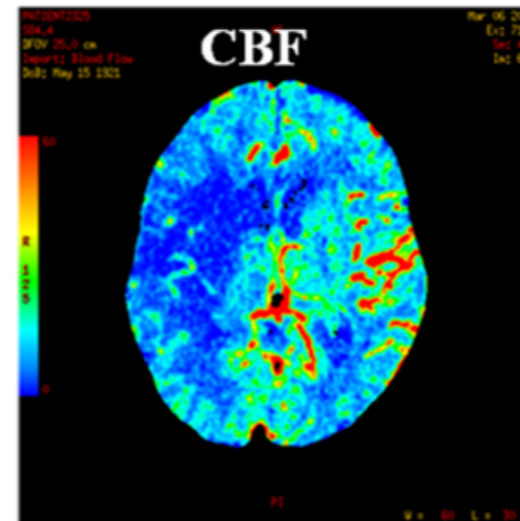


## **Specific objectives:**

- quantify net public economic benefits;
- offer a broad narrative; and
- characterise economic roles

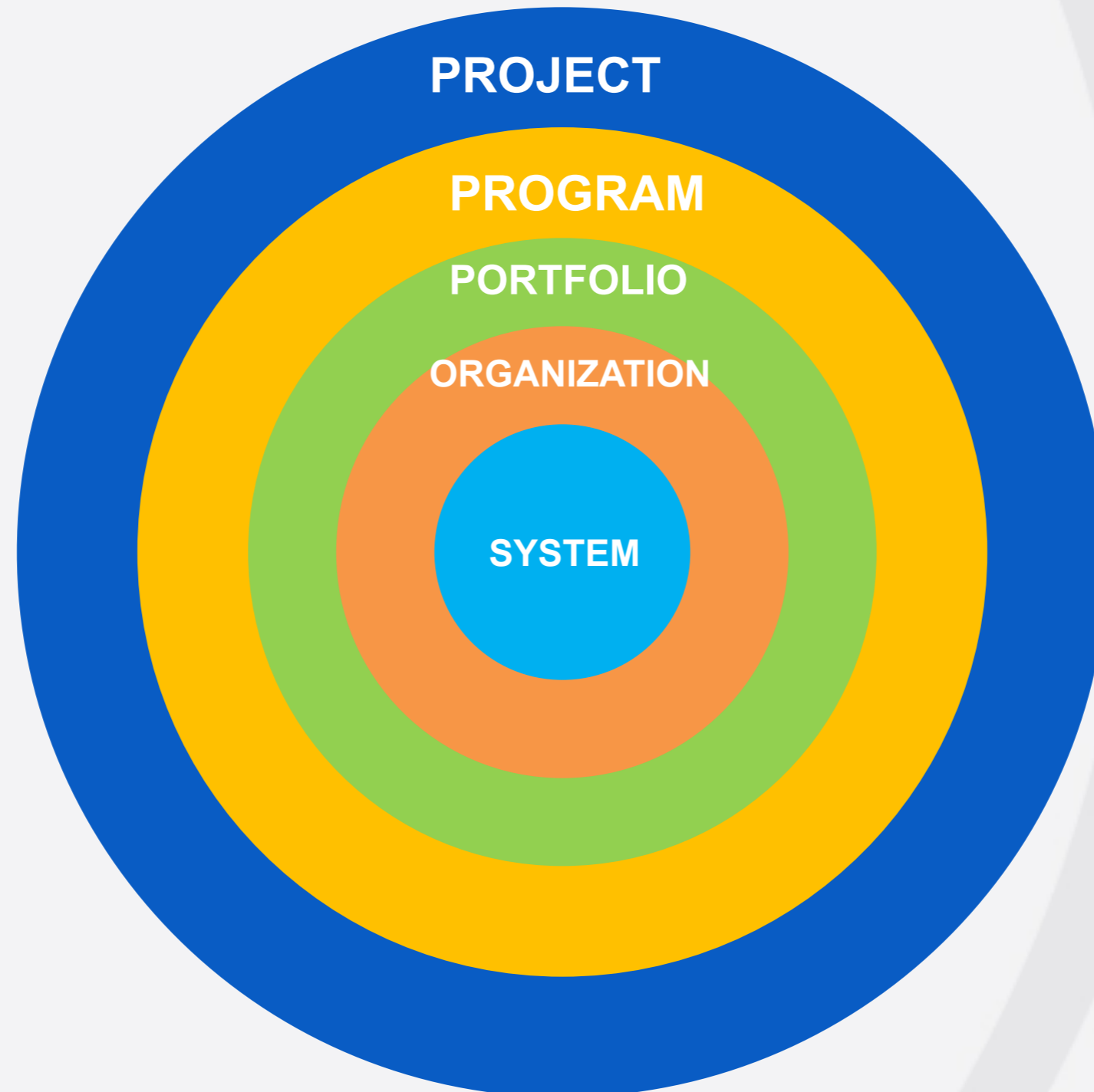
# SEIA Approach

- Builds on the OMS
- Iterative process to refine scope
- Cost basis & “denominator” selection
- Impacts – quantification & narrative





# Target Analysis & Reporting



# NEXT STEPS

## OMS

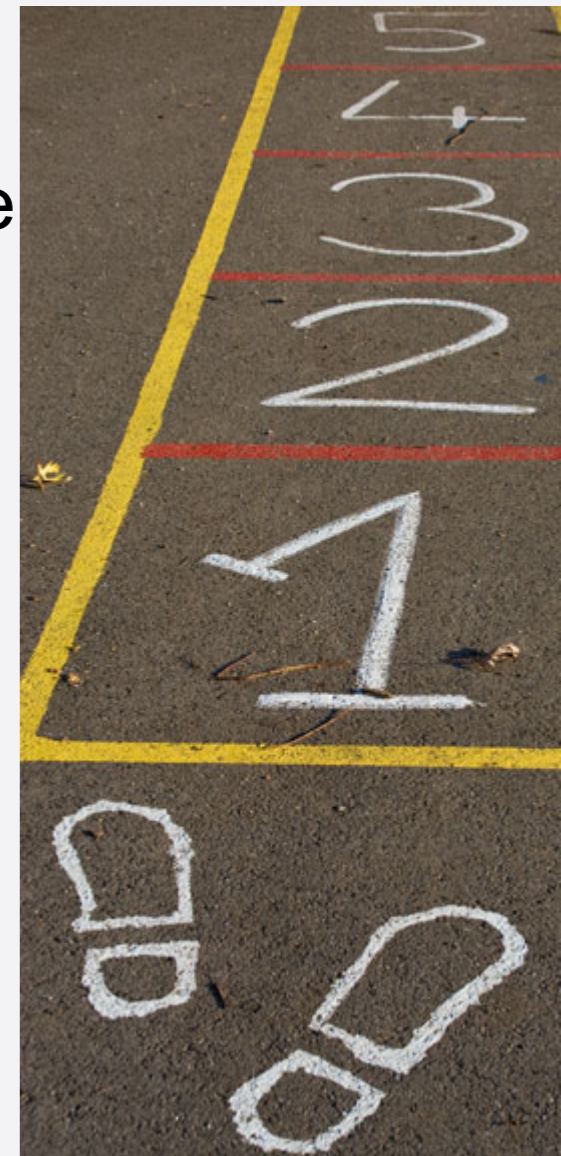
- review lessons learned, review scope and objectives - refine and set the course for future OMS'

## POMS

- develop an overarching plan, complete 1st, plan and complete 2 additional POMS - assess merit and make any necessary course corrections

## SEIA

- finalize initial case study, undertake second case work - assess merit and make any necessary course corrections



# Thank you!

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