



Institute On Governance

# **Making an Impact:**

**The payback framework and determining research impacts**

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*The views expressed in this document are the views of the author and do not necessarily reflect those of the Institute On Governance or its Board of Directors.*

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In 2007 Canada invested nearly \$29 billion in R&D.<sup>1</sup> Knowing how that funding has had impacts on the lives of Canadians has become a key part of the Canadian government's science and technology strategy, *Mobilizing Science and Technology to Canada's Advantage*.

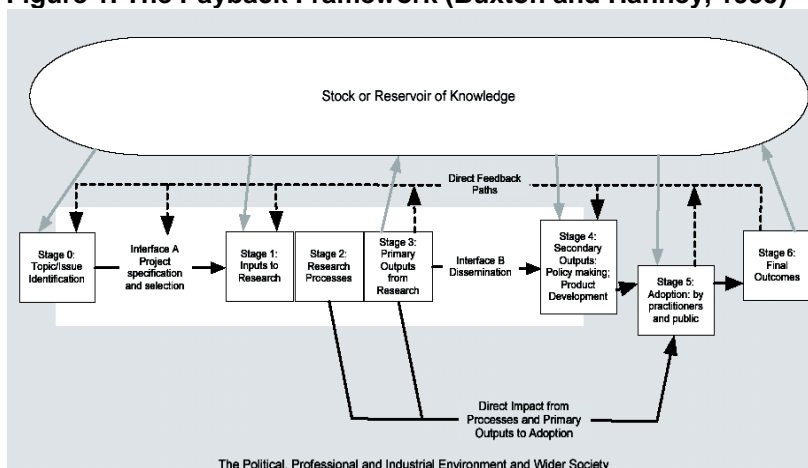
### An internationally tested approach

While each research area has moved on with their own evaluation and accountability frameworks, the recent work of the Canadian Academy of Health Sciences (CAHS) has placed a framework for research evaluation in the spotlight. The CAHS major assessment, *Making an Impact: A Preferred Framework and Indicators to Measure Returns on Investment in Health Research*,<sup>2</sup> built upon the Payback Framework for research evaluation that has been widely used in evaluating the impacts of health research around the globe. Payback analyses of health research have been performed in the UK, Ireland, Hong Kong, the Netherlands, and Spain; with an international study across Canada, Australia and the UK also using the framework to determine impacts.<sup>3</sup>

### What is the Payback Framework?

The Payback Framework is a multidimensional analysis tool that uses a logic model of the research process and a classification system for the benefits of research (Figure 1). The logic model shows the flow of research to outputs and outcomes, while the categorization addresses impacts on: knowledge; research capacity; decision making; health; and socio-economic benefits.

Figure 1. The Payback Framework (Buxton and Hanney, 1995)



### The how and the why

Using the payback framework is simple and can use multiple methods. Previous studies have used case studies, bibliometrics, and survey data to evaluate research. These have allowed comparisons between funding methods (e.g. fellowships, project grants and programs); research types (basic and applied); and research performed at different times (e.g. 5 years ago versus 20 years ago). The Payback Framework has even formed the basis of return on investment studies that have identified dollar returns on research funding. 2008's *Medical Research: What's it Worth* study built on the impacts and techniques identified in previous payback studies.

Although previous studies have looked at research performed a number of years ago (typically between 5-20 years), new work has developed an end of research survey that allows evaluation of a funding body's entire research portfolio.<sup>4</sup>

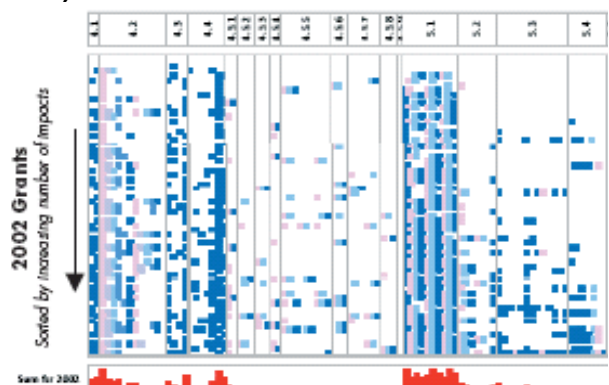
<sup>1</sup> Statistics Canada. 2008. CYP Overview: Science and Technology

<sup>2</sup> For an overview see: Frank and Nason. 2009. Health Research: Measuring the Social, Health and Economic Benefits. *CMAJ*. **180**(5). 528-534

<sup>3</sup> See CIHR. 2007. It's Payback Time: New International Study to Assess Impact of Heart and Stroke Research. Available at <http://www.cihr-irsc.gc.ca/e/35034.html>

<sup>4</sup> Wooding et al. 2009. *Mapping the Impact: Exploring the Payback of Arthritis Research*. RAND Europe

**Figure 2. Research Impact Array (Wooding *et al.* 2009)**



The survey provides a “research impact array”, a data presentation tool that allows amalgamation of impacts across projects, that provides a visualization of the strengths and weaknesses of a research portfolio with respect to impacts from research (such as changes to health policy, education and new products/services). This impact array can be used to compare over years, project types, funding mechanisms etc. to show in real time how research is moving to impacts. The survey underpinning the array can also be reapplied to research a number of years after it has finished (re-surveying) to identify where progress is being made in moving research to impact.

### Applying Payback to all research

After successes in the health research field, the Payback Framework is now being applied to research more widely. In the UK, the Economic and Social Research Council commissioned a number of studies of impact evaluation for their research funding. One of these was a successful test case for applying the Payback Framework to the *Future of Work* funding stream. This project modified the impact categories and the logic model to better reflect the paths to impact, and specific impacts, that social science has.

Most recently, in Ireland the Environmental Protection Agency has used a modified version of the Payback Framework to underpin its evaluation of innovation for a green economy. In *Strive: Innovation for a Green Economy*, the EPA has performed a number of case studies of EPA funding for innovation, using a logic model approach to data collection. This data was then categorized into three modified impact categories: Knowledge production and capacity development; informing policy and environmental benefits; and wider economic benefits.

### Concluding analysis

As a broad framework for assessing research impacts, the Payback Framework has developed into a trusted tool for evaluation of research dollars. The ability to compare the impacts of disparate types of research is a major strength in fulfilling the accountability requirements of research funders, and the simplicity and adaptability of the Payback Framework make it ideally placed to play a major role in this agenda.

#### Further Reading

RAND Europe. 2009. *Mapping the Impact: Exploring the payback of arthritis research*. RAND Europe Research Brief  
 Frank and Nason. 2009. Health Research: Measuring the Social, Health and Economic Benefits. CMAJ. 180(5). 528-534  
 Buxton *et al.* 2008. *Medical Research: What's it worth? Briefing*. Wellcome Trust. UK  
 Environmental Protection Agency. 2009. *Strive: Innovation for a Green Economy*. EPA. Ireland