Chapter 8

Measuring Intangible Assets: Assessing the Impact of Knowledge Management in the S&T Fight against Terrorism

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ABSTRACT
At present, there are no standards for assessing the value of intangible assets or intellectual capital. Historically, a number of frameworks have evolved, each with a different focus and a different assessment methodology. In order to assess that knowledge management initiatives contributed to the fight against terrorism in Canada, a results-based framework was selected, customized and applied to CRTI (a networked science and technology program to counter terrorism threats). This chapter describes the step by step process of how the results-based framework was applied to measure the value contributed by knowledge-based assets. A combination of qualitative, quantitative and anecdotal assessment techniques was used and a map was employed to visualize the evaluation results. The strengths and weaknesses of this particular approach are discussed and specific examples from CRTI are presented to illustrate how other organizations can use this method to assess the value-added to innovation and research and development using a results-based framework.

INTRODUCTION
Executives and managers would be hard-pressed to argue against the theoretical foundations, goals and intended results of the discipline of Knowledge Management (KM) as a potential benefit to their organizations. It is self-evident, even trite, to state that a successful organization must manage its intellectual capital well to achieve competitive advantage, be more innovative and enhance its value. The challenge lies not in accepting these maxims but in the practical application of knowledge management activities and subsequently to be able to demonstrate whether these same activities actually do contribute to the enhancement of the organization and its goals.
This was the challenge faced by Defense Research and Development Canada’s Centre for Security Science. When its flagship program, the Chemical, Biological, Radiological, Nuclear (CBRN) Research and Technology Initiative (CRTI)\textsuperscript{iii} was originally created in 2002 in response to the changing North American domestic security environment, the need for a KM approach was obvious. This Canadian Government program intended to bring together multiple federal departments and agencies to strengthen a national science and technology (S&T) capability to counter the terrorist threats from chemical, biological and radiological or nuclear agents. Only a KM approach would be able to build communities, collaboration, knowledge sharing and creation where such a domain had not existed previously. A robust KM program was created through consultation with stakeholders and the program thrived, becoming a model for others.

Yet, did the KM program contribute to the success of the program? Did it impact the federal laboratories’ capability and capacity to respond to CBRN incidents or contribute to focused expertise, knowledge and capabilities of Canadian CBRN S&T performers in the short-term? Did it assist in any way in engaging the Canadian Innovation System in CBRN counter-terrorism or help the creation of industrial products, technologies and knowledge for CBRN counter-measures in the medium term? Finally, would the KM program contribute to the long-term goals of building the Canadian S&T capacity and capability to prepare for, prevent and respond to CBRN attacks, or enhance the communication, cooperation, collaboration, and interoperability amongst Canadian and international CBRN counter-terrorism communities, or eventually to a effectively positioned Canadian S&T innovation system that contributed to national and international security?

In order to answer these questions at some stage, it would be necessary to develop a meaningful measurement tool and process that would provide qualitative data that would be useful during an evaluation. Measurement tools often tend toward the quantitative side, measuring occurrences of activities. This is helpful to determine pull on services, increased (or decreased) need for resources and to measure trends. But can such measurement processes indicate whether the KM activities themselves actually contribute to the attainment of organizational objectives? The question for the KM Team was: do the KM activities contribute in a meaningful way to the mission and outcomes of the CRTI and can that be measured?

This chapter focuses on the search for a method of meaningful value measurement. The main goal will be to illustrate the use of a result-based management accountability framework (RMAF) as a tool to measure the impact of knowledge management activities on the intangible assets of an S&T counter-terrorism organization. The key alignment of the measurement framework and the strategic importance of the knowledge-based assets will be presented as a recommended best practice. The case study will also describe the general approach to identifying the intangible assets and investigating and selecting the best approach to assessing these assets.

BACKGROUND

In the early 2000s the CRTI was born within a cultural milieu that recognized the need for breaking down knowledge stovepipes and the advantages of working collaboratively for common aims. KM authors were expounding the virtues of collaboration and the need to leverage knowledge in order to gain the “knowledge advantage.” (Prusak, 1996) The Government’s Standing Committee on Industry, Science and Technology had just released A Canadian Innovation Agenda for the Twenty-First Century\textsuperscript{iv} in which it indicated the need for “more coordination of intramural S&T activities among federal agencies, as well as greater collaboration on major horizontal issues—those that
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