



CENTERIS - International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies, CENTERIS / ProjMAN / HCist 2017, 8-10 November 2017, Barcelona, Spain

A Method for Measuring the Success of Collaborative University-Industry R&D Funded Contracts

Gabriela Fernandes*, Eduardo B. Pinto, Madalena Araújo, Pedro Magalhães, Ricardo J. Machado

School of Engineering, University of Minho, Campus de Azurém, 4804-533 Guimarães, Portugal

Abstract

This paper describes a method specially devoted to quantitatively measure the success of collaborative university-industry R&D funded contracts, which could be managed as a singular project or a program of projects. The method aims to measure the success throughout the program/project lifecycle, combining both retrospective (lagging) and prospective (leading) performance indicators. The method uses tangible/specific outcomes as performance indicators, like patents or publications, as well as intangible/subjective performance indicators such as social relationships, organizational arrangements or motivations.

The proposed method was conceived by conducting a thorough review of the published literature on this area, and by analyzing, as case studies, two consecutive R&D collaborative funded programs, between University of Minho and Bosch Car Multimedia, amounting to an overall investment of over 70 million Euros, from 2012 to 2018.

© 2017 The Authors. Published by Elsevier B.V.

© 2017 The Authors. Published by Elsevier B.V.

Peer-review under responsibility of the scientific committee of the CENTERIS - International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies.

Keywords: Project success; program management; R&D university-industry collaborations

* Corresponding author.

E-mail address: g.fernandes@dps.uminho.pt

1. Introduction

Firms seek innovation by making collaborations with universities [1-4]. Collaborative university-industry R&D projects are among the main public policy actions to promote innovation [5]. Research and development (R&D) is increasingly viewed as an important input to innovation [6]. Frascati Manual [6, pp.28] defines R&D as "... creative and systematic work undertaken in order to increase the stock of knowledge –including knowledge of humankind, culture and society – and to devise new applications of available knowledge." To provide guidance on what is and what is not an R&D activity, the Frascati Manual identifies five criteria: the activity should be: novel, creative, uncertain in its outcome, systematic and transferable and/or reproducible.

The attractiveness of university-industry collaborations is recognized as fostering positive impact on both partners and also on the countries where those collaborations occur [5, 7, 8]. University-industry collaborations are considered to be an engine towards knowledge-based societies and economies, threatened by increased global competition, with ongoing economic issues and high levels of unemployment. The university-industry collaborations are on the agenda of the political decision makers. The different states, including the European Union, support initiatives such as collaborative R&D projects through public funds, thereby stimulating innovation [3, 9].

Industry embraces such collaborations for a number of reasons, namely to increase their R&D investments through public funding, to obtain higher performances in their innovation initiatives, to share risks and uncertainties [10, 11] at lower cost [7, 12, 13] and to increase the resources' skills and competences to outperform the competition in the global market [8, 14]. University seeks, for example, to acquire funds to hire human resources and purchase cutting-edge equipment [3, 13], develop new case study teaching material [7] and to increase the capacity to attract new students [13].

It is a demanding task to achieve these benefits due to the existing "cultural gap" between both partners, requiring well organized and managed R&D collaborations [10], which can be managed as a program or a project. Program is a set of projects that are somehow related and contribute to the same goal [15]. Differences are found in the way programs and projects are managed, namely in response to uncertainty and change [16].

With the rise of collaborative R&D programs/projects between industry and university [17], the need for monitoring and assessing the outcomes of such initiatives has increased as well [5]. How to measure the success of such university-industry R&D collaborations is an important challenge, and few attempts have been made [18]. A two-fold systematic measurement is necessary: to assess programs/projects *a posteriori*, to find out which benefits have been and are being provided by the collaboration, matching them with the initial benefits expectations [5, 17] and, not least important, to monitor the on-going process to outperform the competition in the global market to enable adjustment and improvement [8, 17].

Mainly based on Perkmann, Neely and Walsh [17] suggested performance measurement system for measuring the success of university-industry alliances, a quantitative method was specially developed to assess the success of collaborative university-industry R&D funded programs/projects, combining both retrospective (lagging) and prospective (leading) indicators.

The method uses tangible/specific outcomes as indicators, like patents, publications or licenses [1, 5, 17], as well as intangible/subjective indicators such as social relationships, organizational arrangements or motivations [1, 17], although acknowledging the complexity of reaching a general agreement on the criteria to be used to evaluate these subjective indicators. The method also includes variables that allow to judge the success of the program/project not only *a posteriori*, i.e. after the program/project closure, but also *a priori*, during the program/project lifecycle [5].

This paper has the main objective of presenting the abovementioned method to quantitatively measure the success of collaborative university-industry R&D funded programs/projects, including the steps of its application. The case studies used as research method were the HMIExcel and IC-HMI R&D collaborative funded programs, between University of Minho (UMinho) and Bosch Car Multimedia in Portugal (Bosch). The case studies were selected for convenience. In fact, this research work resulted from UMinho and Bosch partnership's need to have a quantitative method to measure and compare the success of their R&D collaborative programs/projects.

HMIExcel, closed in 2015 (IC-HMI stills in progress), was considered a successful university-industry R&D collaborative funded program as reported in Pinto et al.[19]. However, its success was mainly subjectively perceived

Download English Version:

<https://daneshyari.com/en/article/6901571>

Download Persian Version:

<https://daneshyari.com/article/6901571>

[Daneshyari.com](https://daneshyari.com)