Chapter 20
Open Innovation Model Proposal for the Colombian Air Force

Gerson R. Jaimes Parada
Colombian Air Force, Colombia

Luis Rodrigo Valencia Perez
Autonomous University of Queretaro, Mexico

María A. Corzo Zamora
https://orcid.org/0000-0002-6462-6745
National University of Colombia, Colombia

ABSTRACT

An organisational model in open innovation is proposed for the Colombian Air Force that could be implemented in the institution or in other military entities, as well as in companies with hierarchical structure. It includes a new perspective of the articulation of the university, enterprise, and state with the theoretical foundations of open innovation. The main objective of this research was to design an open innovation (OI) model to articulate the actors of the Science, Technology, and Innovation System (ST&I) of the COLAF, throughout a qualitative approach of documentary review, where variables of open innovation, internal, and the external factors of open innovation were defined for the subsequent construction and proposal of the model. Concluding, the construction of this OI model for the COLAF could allow an inclusive and binding model of Colombian society with university, enterprise, and state to join efforts and to cooperate for achieving an stable innovation ecosystem.

INTRODUCTION

Throughout its 100 years of history, the Colombian Air Force has solved operational needs by applying processes based mainly on technological development. In 2004, the Directorate of Science, Technology

and Innovation was created, which allowed a timid approach with universities to strengthen capacities in advanced knowledge and formalisation of Science, Technology, and Innovation (CTeI).

Subsequently, in 2005, the Oslo Manual was published, which defines innovation as the introduction of a new or improved product, good or service, and presents innovative activities that correspond to all scientific, technological, organisational and financial operations. It also defines four types of innovation: 1. product innovation, 2. process innovation, 3. marketing innovation and 4. organisational innovation (Ocde, 2005).

In coherence with Oslo manual, the COLAF directly establishes the types of innovation in process, product, organisation and indirectly innovation in marketing, but these innovation activities are carried out through a traditional and closed technological management model. However, a conceptual change in this field is required inside the COLAF using the study and application of innovation concepts as an organisational strategy.

Later, in 2009, formal processes of knowledge protection were initiated. Likewise, in 2013, the need to strengthen innovation processes through national and international allies for the transfer of R&D&I products developed by the COLAF was understood. However, given the new national and global challenges in terms of competitiveness, and the fulfilment of the national policy of contributing as a state entity in the construction of the social and economic fabric of the country, the COLAF is required to venture into a new model different from the traditional innovation model that has immersed the benefits of open innovation.

According to above situation, the following research question was posed:

How can the COLAF articulate the actors of its Science, Technology, and Innovation System?

To answer this question, the following objectives were proposed:

General Objective

To design an Open Innovation model that allows the articulation of ST&I in the COLAF.

Specific Objectives

To identify the actors of the ST&I of the COLAF.

To determine the internal and external factors for an open innovation model according the ST&I of COLAF.

To develope these research objectives, this chapter seeks to describe a model of AI, to understand the social and technological changes, the growth of knowledge and its democratisation (Group, 2009); and in this way, it is possible to take advantage of both internal and external resources of each actor of the FAC's ST&I, in the creation and transfer of Research, Technological Development and Innovation (R+D+i) products.

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