پژوهش‌های مدیریت عمومی
سال سیزدهم، شماره چهل و هفتم، بهار۱۳۹۹
صفحه ۳۰-۵

تاریخ دریافت : ۱۳۹۷/۰۸/۰۲
تاریخ پذیرش: ۱۳۹۸/۱۱/۱۴

Analysis of the Types of Collaboration Networks in the Defense Innovation Process

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Received: 24/10/2018; Accepted: 03/02/2020

Extended Abstract

Abstract

Scientific collaboration is one of the main drivers of innovation and a key component of indigenous technology development. When academia, industry, and government are embedded in a growing network of interactions, interactive learning and the expansion of knowledge resulting from it leads to innovations that help advance the technology industry. In the defense field, innovation plays a key role in improving equipment, processes and providing advanced services to the military. Therefore, the present study aims at analyzing defense cooperation networks according to the special needs in each of the various sectors of the technology development process and innovation to examine the network, innovation and technology development process, types of defense cooperation, types of cooperation networks and network experiences. Then, with the help of content analysis, the indices and characteristics of each collaboration network are extracted. Finally, with the help of an expert panel of defense thinkers and executives, a variety of interactions of the Defense Cooperation Network actors depending on the nature of the cooperation, capability, and level of cooperation have been graded according to the process of technology development and innovation in the defense industry. Networks and defense industry needs are identified and leveled in the process of technology development and innovation.

Introduction

The defense industry is one of the most important users of new technologies in the country that play an active role in the innovation process. In this way, it can direct the innovative processes by presenting defense needs, evaluating existing technologies and providing suggestions for improving defense technologies (Beigi and Alim Mohammadi, 2015). Military centers are one of the key parts of any country, because ultimately the security, authority and peace of mind of each country is achieved with their help. Since this section, according to its missions, it must continuously upgrade its capabilities and provide advanced technologies and weapons, in the meantime, part of its needs through knowledge cooperation networks with organizations such as Non-defense universities and research centers are realized. Cooperation networks, especially in defense centers, allow the maximum use of academic capacity for the defense sector, leading to the development and provision of new products and services for the armed forces through the production of many ideas in this regard, development and improvement. The functions and quality of current products for the Armed Forces are improved by improving the design and quality of raw materials and improving the supply, production and support processes, improving the efficiency of investment projects by developing internal and external networks through the participation of existing units in the network. Creating defensive competence by reducing costs, increasing efficiency and bagging Higher quality is provided by contracting and working with external business partners, effective interaction between product specialists and defense technologies with armed forces experts and industrial and academic elites to create a suitable space for identifying, producing and collecting ideas, opportunitiesSince each step of the innovation process has different features and conditions and accordingly requires the use of a specific range of ideas and activities, the present study examines the types of cooperation networks and according to It has examined the development process and defense innovation in a variety of collaborations, and based on the nature and sensitivity of the activities of each section of this process in military centers, it has provided the most appropriate network for use in each step.

Case study

In this qualitative research, elites of defense ministry in technology management department in Iran constitute the research population and data collection.

Materials and Methods

Dou to the nature of the subject, the research is conducted in a qualitative manner and is based on content analysis. Data collection is conducted through interview with 12 elites of defense military research institute in Iran.

Discussion and result

. After examining the dimensions of the issue and exchanging views on the characteristics of the cooperation network and the types of cooperation between the defense and non-defense centers, according to the organizational conditions, new axes were proposed for study that covers the previous axes. Also, the panel of experts examined the characteristics of the cooperation network and compared it with the types of defense and defense cooperation in seven stages of the process of technology development and innovation. In this way, the characteristics of each cooperation network are compared with the nature of each level of cooperation in each of the stages of the innovation development process and according to the characteristics and nature of the activities of that sector and the type of interactions, and finally the appropriate cooperation network. Identify for each level. For this purpose, the consensus index was used to analyze the opinion of experts.

Conclusion

Based on the content expressed in the panel of experts and content analysis, it was concluded that at each level of cooperation, we need to use a particular type of cooperation network. In addition, due to the various stages of the process of technology development and innovation, each of which has its own characteristics, different cooperation networks should be used, and it is not possible to achieve success simply by establishing a cooperation network. Rather, the conditions and characteristics of cooperation and the desired part of cooperation have a great impact on the choice of how to cooperate. Therefore, according to the characteristics of each cooperation network and the existing conditions, some cooperation networks can be used at any level of cooperation.

Keywords: Network, Collaborative Relationships, Innovation Process, Collaborative Network Types, Defense Industry, Collaborative Defense Types.