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A Model for Commercialization of Technological Products in terms of Market Stagnation in Iran

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Abstract

Nowadays, the commercialization of technological products is considered as one of the most important requirements in Iran to improve the economic cycle. Using indigenous technology seems to be a rational approach due to the sanctions; therefore, identification of important factors in the commercialization context considering market downturn conditions can play an important role in the optimal performance of companies in the markets on technological product supply. This study aimed to develop and provide a model for commercialization of technological products in market downturn conditions. This research is purposefully a practical study and an exploratory mixed research in nature. The statistical population of this study consisted of marketing and commercialization experts in qualitative stage. These experts were identified using purposive sampling along with the snowball method, among which 20 experts were finally interviewed regarding data adequacy. As well as, 123 active companies in technology-based businesses were also used to test the model. Grounded theory and structural equation approach are the methods of analysis. The data were collected through in-depth interviews with the distribution of the 47-item questionnaire. The results confirm that "intra-organizational potential" is proposed in the case of causal conditions. "Localization of modern technology" was the main phenomenon identified in the study and "institutions involved in the commercialization process" was the intervening factors identified in the model. The context of this research is also "intra-organizational commitment" and "intra-enterprise economic conditions".

The main strategies included "market orientation" and "financial resources" and ultimately the main consequence of these strategies was "improve sales performance". The results of the structural equation approach confirm the relationships designed in the grounded theory model.

Introduction

In fact, technology commercialization is the creation of a new product, service or process based on satisfying new demand, and therefore providing it requires continuous efforts to transform the results of new products and services and their successful marketing. Accordingly, it can be stated that in addition to facilitating the process of converting ideas into product and services, market and marketing conditions are also among the issues involved in technology commercialization.

The country should be able to benefit from the ability of companies operating in the field of commercialization to achieve a resilient economy and reduce dependence on developed countries' technologies. This issue is very important given the current sanctions, and failure in this area is recognized as a major challenge. Therefore, designing a model for the commercialization of technological products in technology-driven companies can have great advantages for Iran. The main question of this research is as follows: What is the pattern of technology commercialization in technology-based companies in market downturn conditions?

Case study

The statistical population of this study consists of two parts:

- (i) The first part of statistical population was related to individuals who were selected for the interview included experts in the field of commercialization of technological products and active academic elites according to the subject area. They were selected by purposeful sampling through criteria such as expertise in commercialization issues, practical experience in delivering technological products to the market, and so forth. Eight experts were identified; then the number of respondents increased by continuing the interviews using the snowball sampling method. Usually this sampling was continued until the researcher obtained the sufficient data. Thus, 20 in-depth interviews were conducted in this field, in which information were repetitive from the 15th interview onwards, and the researchers reached theoretical saturation, but interviews were continued with 20 individuals for sure.
- (ii) The second part of the statistical population consisted of active companies in the field of technological products. The number of these companies was 180. Using Cochran's formula, the sample size was 123 companies. The researcher has attempted to use a simple random sampling method. It was attempted to provide each senior executive of

the companies with a questionnaire. SmartPLS software was used for data analysis in this study.

Materials and Methods

In the first part of this study, the grounded theory approach was used to identify the pattern of commercialization of technological products under recession, and the partial least squares approach was used to test the model. The interviewing tool was used in the first step and the questionnaire in the second step in order to collect data. Interview sessions began with questions about causal factors affecting the pattern of technological product commercialization in a recession (open interview) and questions continued based on the participants' response. In the questionnaire section, a 47-item questionnaire was designed based on the final model.

Discussion and Results

Six specific aspects of systematic pattern design were examined in this study: intra-organizational potentials were identified in the case of causal conditions; considering the technical characteristics of the organization and the intangible assets of the organization was the major component regarding the intra-organizational potential; on the other hand, the important issue of infrastructure and its enhancement is to improve performance; localization of novel technologies has been identified as a major phenomenon in the process of commercialization of technological products. The context of the phenomenon of commercialization can be described in two areas: (a) intra-organizational commitment, and (b) economic conditions prevailing in society. Commercialization can progress properly if corporate management within the organization has sufficient commitment to research and development (R&D). On the other hand, it is budget, financial resources, and targeted allocation in this area that can increase the activity in these projects. The presence of constant financial resources in companies, preventing downturns, and marketing platforms are other critical issues that can be very effective in commercialization. Marketing measures can well draw market demands in the field of technological products, and this undoubtedly provides the required background for enhancing and improving technological products tailored to market demands.

Conclusion

In the model of this research, the corporate strategy in the field of commercialization of products is discussed which can play an important role. On the one hand, financing is an issue that should be considered. Inexpensive financial resources as well as financial allies are a topic of great interest in the field of financing. Working in the commercialization of technological products requires extensive investment. Another strategy in this area is to focus on market orientation, activities that make

commercialization successful in domestic and international markets. Undoubtedly, working properly in commercialization will have no consequence except improving sales performance and welcoming market performance. Sales performance and its improvement can transfer higher revenue to technology organizations.

Keywords: Modern technologies, Technology commercialization, Technology products, Market stagnation