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The Influence of Constructing Science and Technology Parks on the Integration of Knowledge Production and Emanation of Products and Services

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Abstract

Development of technology as a main and vital concept for reaching the economy based on knowledge and healthful is an undeniable fact which has to be analyzed from all perspectives. Technology plays an important role in all of our lives and it is introduced as enormous and huge business in order to accomplish social welfare and wealth. To solve this conundrum, developed countries of the world consider total system of science, technology and industry under a general system named as the innovation system together and they interact with each other. Science and technology parks are one of the components relevant to this system which have a significant role in integrating the knowledge and producing goods with high quality. It has been attempted in this investigation to survey the situation of science and technology parks in transferring technology notions. It means that paying attention to the technology concept in the processes of developing the technology I a suitable environment has the potential to create the sustainable economic value. Thus, there are reasons which prove the technology sequence could create economic value in a form of dynamic pattern including creation and innovation increase and most importantly increasing building science and technology parks.

Keywords: Information and technology parks, science, sustainable economy.

Introduction

21th century is termed technology age because the information has a particular role in this century. The importance of information could be realized through evaluation and planning and investment in various countries over the world[1]. The world is the one which major and massive advances are phenomenon which are greatly indebted to scientific and technological progress. Technology is one of the most crucial factors in producing goods and services. Hence this notion accounted for a significant importance. Technology transfer is one of our responsibilities. Thus, the discussions related to technology transfer are transparent issue in developing countries.

Those countries which are approaching the development subsequent to developed countries due to some reasons, in order to be able to travel distance to other countries in a shorter time, they need to apply shortcut methods such as technology transfer[2]. Conceptually, the technology transfer itself includes choosing suitable approaches and then, acting technology transfer through selected method and finally, gaining suitable information feed backs from transferred technology so as to correct the method or how to apply it[3].

Scientific studies are one of most important and main ways to reach manifest and hidden facts of the universe and discover the sources and new concepts to respond to issues and problems, needs and requests of the human beings and the society. Thus, on the modern stage of the world, the basis of the wealth and authority of the nations is based on the knowledge. Information and technology parks as one of the social places and a ring of the chain of economic development with the purpose of increasing innovation, economic development and job creation of specialists and thinkers have arisen[4]. Forming and developing of several new phenomena is derived from these parks. Governments attempt to provide the working conditions for small and medium enterprises through creating an appropriate environment. So, the role of governments in developing and flourishing these parks is extremely important and vital[5].

Problem Statement

Whenever that it is discussed regarding the lack of efficiency in the economic conditions of the countries, some parts of them have been created due to the inefficiency of technology transfer[6]. Using information systems and communication technologies make the society able to serve advanced methods of technology while they attempt to obtain the latest science. Furthermore, they engage more people in information and communications through increasing the level of general knowledge of the society. In this context, multimedia technology is one of the latest achievements which has opened its space among communication technology in the recent years and it is considered as a modern manner for transferring the notions and information.

An information and technology park is an idea to develop applied investigations and commercialization of the corresponding results relevant to investigations. Therefore, according to increasing need of the society to information especially amongst scholars and students, lack of information spaces can be obviously seen. The environment, which collects creative people and scholars in addition to the development, provides places for ideas conversion and applied thoughts in addition to create the field of growth. In this investigation it is attempted to recognize and extract the factors affect on technology transfer.

Investigation Methodology

Two methods; survey and analysis have been used in this investigation. To recognize the factors which impact on the technology and information transfer, collecting the information and data through library studies and evaluating the investigation background, the research movement base has been distinguished. Moreover, the information has been achieved with field studies. Eventually, the obtained information has been evaluated and surveyed.

The notion of technology transfer: The people's ideas are different regarding the concept of technology transfer. As a general issue, because technology is not such an object which can be removable from a point to another one so generally, technology transfer is interpreted as knowledge transfer. Thus, the knowledge means the ability to use information and awareness. So, technology transfer can be achieved merely if the receiver could utilize the technology transfer towards their needs. Some definitions of technology transfer: i. Technology transfer means the transfer of the knowledge which leads to improve the technological capacity of a country[7]. ii. Technology transfer mans using the available technology in a situation in which has never been used before[8]. iii. Technology transfer means transferring technical knowledge based on the local conditions associated with attracting and developing it effectively on a nation or a country to another one[6].

Science and Technology parks

Science and technology parks are places which have been managed by professional specialists and their purposes are related to creation of knowledge and technology amongst universities, research and development institutions, private companies and markets through growth of the enterprises depended on the innovation. A science and technology park makes the commerce form and progress based on the knowledge [9]. The success of science and technology parks plays a significant role in the scientific-economic growth and development in numerous countries and it also causes increasing the mentioned pattern in different countries quickly. Actually, economic development of several developed and developing countries is indebted to the existence of science and technology parks on them. Parks were transformed completely through the successful performance of active firms at parks. Furthermore, the dormant and inactive regions are converted to the most dynamic and the most advanced industrial centers all over the world[10].

Types of science and technology parks

Science and technology parks are categorized differently according to various perspectives. These parks are divided into three categories through theoretical view: i. Integrated: such science and technology parks are set up by governments as a place for long term technology policies[1]. ii. Science and technology parks with science push: in these parks, the conclusions of scientific research are kept such that the possibility of their interaction with the industry and commercialization of the investigated results are provided. So, more financial sources will be available for conducting research. Numerous countries decided to establish such mentioned parks[1]. iii. Science and technology parks of Demand Push: this kind of technology parks has been established by various companies to reach the requests of the markets. Most of this kind of science and technology parks exists in Germany. These parks in Germany have been established with the private investment and they work in technical, technological and commercial fields. It is needed to know that science and technology parks have been termed as various names in different countries. For example, science and technology parks are called Corrido, Technopole, Technopolis and Innovation Centre in the USA, France, Japan and Germany, respectively[1].

Science and technology parks Science and technology parks cause increasing the knowledge and capital attraction: Science and technology parks, from the perspective of helping the growth of small and medium active enterprises in research-oriented economic field, make increase the amount of produced knowledge in the area and attract foreign capital. Undoubtedly, it is a determined factor in the economic development based on knowledge[11,12]. Furthermore, they play a particular role in dissemination of the culture of competition and innovation in an area and technology transfer amongst different parts through establishing the knowledge amongst firms, small institutions, markets and universities and research centers[13].

Briefly, science and technology parks in a knowledge-based economy have three main function: i. They aid to increase the knowledge of the economic firms and companies through providing the necessary conditions for knowledge transfer from research centers and universities to economic firms. ii. They contribute to create enterprises and new economic institutions. iii. Creation of the attractive environment for foreign investors through providing a set of companies, knowledge-based economic firms depended on innovation and also establishing suitable environment for competition, innovation and utilizing the knowledge and economic capacity of the region[14,15].

On the other hand, science and technology parks have a special and prominent role in the national innovation system related to each country in comparison to other components and players of this system. This special feature is the play of compensatory role concerning some weaknesses and defects of the national innovation system of the country[16]. In addition to this, the characteristics of the national innovation system determine the features of the technology park. Since the features and facts of the national innovation system will be different in various countries, these differences –because of various areas of activity– make the science and technology parks work with various goals and plans relative to each other. But technology parks necessarily contain specific characteristics like any organization which it could not be expected to perform efficiently and matched to the needs and purposes without the characteristics. These features are basic and main factors of a park the shortage of each of them could block the road to success. Actually it could be said that other plans and preparations are greatly depended on the existence of the factors. That is why there is a limited number of vital areas in each organization that if the success and satisfaction are obtained in the corresponding areas, consequently, the organization will flourish[17]. A limited number of key areas exist for per organization which all tasks should be done properly in all fields in order to obtain success and progress[18]. Distinguishing of these vital factors is one of the most important steps of planning the future of the technology parks. Because the organization does not have the potential to plan for the future perfectly without finding out the corresponding factors. Although each technology park accounted for own specific success factors, the investigations indicate that similar aspects could be found which applied for all present science and technology parks in a specific area[19].

Conclusion

The necessity for applying the technology as a motive engine of economic growth and enhancing national security provides conditions that planning for technology development is brought up as a vital necessity for country development. Undoubtedly, reaching the powerful and knowledge-based society will not be achievable without purposeful planning for developing science and technology parks. Science and technology parks, as a particle of the national innovation system and a ring of the chain relevant to the knowledge based economy development with providing the conditions of market oriented investigations and commercializing the results of the studies, play significant roles in accelerating the process of converting ideas into goods and technology development. It might be said what makes technology and science and globalization of the economy develop quickly is related to knowing economical transformations around the world accurately and comprehensively and also suitable applying of educational and experiential facilities of other nations timely. The mentioned aim could be achieved through these science and technology parks. It is necessary to mention this point at the end, although technology and science impact on the economy of the country significantly, mostly their effects are not direct and it might be effective few newt periods. In another words, future economic development is due to establishing the necessary infrastructure for developing technology at the present time. Thus, one of serious challenges is determination of a process which joins science and the technology to the economy and then, responsible officials do not seek the results immediately.

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