

Localization of Advanced and Emerging Technologies and How

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Abstract--- Today, in every organization, the use of advanced and emerging technologies is discussed and the usefulness or necessity of using these technologies is discussed everywhere. The arrival of any new phenomenon in the country, if accompanied by relevant knowledge and the provision of the necessary domestic context, has been properly developed. Localization of defense equipment and technologies is an important issue, and if today Islamic Iran is impenetrable in the field of defense equipment and takes the lead in the world, it is because it is indigenous. Therefore, creating an atmosphere of abuse and incitement of the people in order to prevent the localization and indigenous knowledge of Iran is on the agenda of the enemy. In this article, we examine the localization of advanced and emerging technologies and how.

Keywords--- localization, technology transfer, innovative imitation, technology innovation.

I. INTRODUCTION

"Globalization" is a vague, complex phenomenon with various dimensions, and some have called it a process and others have called it a project. Globalization has had undeniable effects on the national security of countries and has created challenges or opportunities for national security and has created changes in its political and cultural dimensions. Since the issue of security is vital for the Islamic Republic of Iran and in order to achieve a theoretical and practical strategy of national security, we need a comprehensive study of the variables affecting it, this issue can help the country's officials in choosing appropriate strategies. And confident in the field of national security will help and pave the way for an operational plan to improve the national security of our country in the age of globalization. (MahmoudiMeymand, 132) The advancement of technology and in line with it the development of means of communication - information that has a direct relationship with the people and affects public opinion, shows its importance in all aspects of the world community. Therefore, today, countries use these technologies to achieve their goals and interests in other parts of the world. (Rafiei, 1302) Ensuring the information security of organizations in today's environment, which is composed of interconnected networks, is a difficult task and with the arrival of any electronic product and any intrusion and espionage tools, this task becomes difficult. Efforts to make them resilient to attack and to consider passive defense issues are vital today. There are many factors that threaten the security of a network. Therefore, we need to protect and take into account passive defense issues with security facilities. (HeidarAzadzadeh et al., 2013).

Passive defense is a set of unarmed actions that reduce the vulnerability of the country's vital, sensitive and important infrastructure to the hostile actions of a foreign enemy. (Passive defense information base of the country, 1300) In order to realize passive defense in new technologies, the infrastructures of these technologies must be provided in the country. The

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localization of related technologies is one of the factors that reduce the damage caused by attack. (MahmoudiMeymand, 132) Our country is among the developing countries and technology transfer is recommended as a shortcut to access to modern technologies to these countries; Provided that the technology is really transferred and the localization of the transferred technologies is also considered. (SalehiVaziri et al., 132)

The importance of localization

Empowering the local community through localization and based on indigenous knowledge is one of the discourses in the field of new development paradigms and has received much attention. What has highlighted the issue of localization in recent years is the revelation that borrowing the methods and experiences of others without considering the differences between communities, cultures and spaces can not lead to sustainable development in these communities. (Friday, 1380)

The effect of localization

Providing a new and more efficient solution and producing technology, although a great job, requires research environments and research support. Due to the huge distance we have with developed countries, there is no time to start from scratch. Therefore, we must move in the direction of taking the technology of developed countries and localizing and implementing it delicately and logically and according to scientific principles. In order to reduce the pathological consequences of development, in re-conceptualizing development, three important and underlying processes have been considered, which are: social capital, participatory democracy and empowerment. If we consider localization as the adaptation of external development patterns and methods to the internal conditions of the local community and the strengthening of local patterns and methods in accordance with the development flow, it can help to empower the local community of the third world. What is true about development and localization is that development based on localization and based on indigenous knowledge helps to empower the community and social rehabilitation. Therefore, in order to achieve more effective ways of development, the experiences and abilities of the indigenous knowledge of the local community should not be neglected in order to localize the development model. But it is not enough for developers to be aware only of the need for indigenous knowledge during development, but the next step is to understand the different types of indigenous knowledge, how to preserve and transmit it to future generations and how to use it in the evolution and development of society. (Emadi and Abbasi, 130.) Without recognizing indigenous knowledge, its role and position and protecting the knowledge and rights of indigenous peoples, sustainable development can not succeed. Because indigenous knowledge is most compatible with the principles of sustainable development. (Rezaian GhiyehBashi, 2013)

How to localize

The process of linking imported technology with the goals, conditions, facilities and needs of the technology importing country is called adaptation or so-called "localization" of technology. Technology localization is concerned with various aspects such as the adaptation of the transferred technology to the resources available in the technology receiving country, climatic conditions, goals, policies and programs of economic, social and cultural development and social values of the receiving country. (Ali Ahmadi, 132) Rapid access to modern technologies, without going through a long and costly path of endogenous technology creation, has been the main motivation of developing countries in technology transfer. Therefore, according to some industrial policy experts, late industrialized countries should for a long time replace the strategy of "imitation or learning" with the strategy of "invention" and "endogenous development". (SalehiVaziri et al., 139)

II. METHODS OF TECHNOLOGY ACQUISITION

The methods of acquiring technology in a country are twofold: either that country must go through all the stages of creating a technology, from laboratory research and semi-industrial stages to the industrial stage completely inside, endogenously and using internal research, or To transfer a technology from a country that has already acquired this technology. For developing countries that have deep technology gaps with leading countries, creating endogenous work technology is time consuming and costly. Another way for developing countries to access technology is to purchase and transfer technology from developed countries. (SalehiVaziri et al., 139)

Technology transfer process

The process of technology transfer is the acquisition, development and application of a technology by a country other than the country of origin of the technology. The technology transfer process is done in two stages:

Selection and purchase of technology

It includes all interconnected actions and activities that are performed according to the goals, conditions, characteristics and needs of the recipient to determine the most appropriate technology required and also to identify the most appropriate holders. After selecting the required technology, the necessary negotiations are held with the country of the source of the technology and the necessary agreements on the obligations of the parties are signed. (SalehiVaziri et al., 139)

Technology absorption and localization

During absorption and localization, the acquired technology becomes an internal part of the technology environment and industrial structure of the receiving country. (SalehiVaziri et al., 139)

Localization of imported technologies through internal research and development and technology transfer

To localize technology, it must be adapted to the conditions and possibilities of the technology recipient. For this purpose, the following researches can be the first steps to adapt the desired technology to the conditions of the country, which shows the prominent role of research and development units in this process.

- Research activities to replace domestic raw materials with imported raw materials.
- Research on tolerances and quality standards
- Translation and compilation of technical knowledge related to technology and complete mastery of it.
- Research to optimize the product, production process and increase machine efficiency.
- Technical and economic study to copy the desired technology and efforts to achieve this problem
- Technology development, combination of technologies and product innovation.
- Dissemination of imported technologies among the country's industries. (SalehiVaziri et al., 132) Some of the most important factors in the successful transfer of technology to newly industrialized countries are: efficient and effective management, close cooperation between research centers and industries, attention to research and development activities, market availability Adequacy, good capability and capacity to attract the technology receiving country, effective government support, willingness of the technology transferring and receiving technology, export development policy. Hiring technical and scientific personnel, purchasing and importing machinery and receiving technical assistance from the main machinery manufacturers, reverse engineering, sending troops abroad, for training and gaining practical experience and holding conferences and book fairs, publishing publications and international exhibitions, and Commercial, industrial, informal ways of access to technology.

(Banavand, 2007) Evaluation and definition of a development plan, application and commercialization of technology, design, investment and executive management of national macro-plans of technology and innovation with the aim of achieving Production-oriented technical knowledge, support for the formation and development of quantitative and qualitative knowledge-based companies in the field of communication and information technology, laying the groundwork for the process of localization of related technologies in the field of communication and information technology through definition and implementation of prototype and pilot projects Joint in compiling documents and operational and executive programs in the field of communication and information technology, paving the way for allocating a part of domestic markets to domestic products, paving the way for exporting goods and knowledge-based services in the field of communication and information technology, including promoting technological and commercial capabilities. Zi is an indigenous technology to which the government has paid attention and measures have been taken in this regard.

REFERENCES

- [1] Banavand, M.; (2017); Comprehensive approach to technology transfer; p.17.
- [2] Jomehpour, M.; 130; Indigenous knowledge, localization and its role in the sustainable development of local communities. HaidarAzadzadeh, Mohsen, BayatiChaleshtari, Niloufar; Vahedian, Ali; Suki, Mojtaba; 130; Basics of passive defense in the field of information technology security; Sixth Congress of the Iranian Geopolitical Association of Passive Defense.
- [3] Rezaian GhiyehBashi, A.; (2013); Investigating the effect of localization on people's empowerment.
- [4] Rafi'i, A.; 130; Governments and public opinion, psychological warfare; Dadar Research Publishing; 0 پ. 161.
- [5] Salehi Waziri, H.; AsadiFard, R.; 139; Assimilation and localization of imported technologies, how and with what tools ?; Iran Thought Center Network, 11 p.
- [6] Ali Ahmadi, A. 139; Research management to technology development; Islamic Azad University Scientific Publishing Center; p. 10.
- [7] Emadi, M. H., &Abbasi, E.; 139; Ancient Wisdom in the Modern Age: The Application of Indigenous Knowledge in Sustainable Development; Ministry of Jihad Sazandegi, Research Center for Rural Issues; first volume; 034 p.
- [8] MahmoudiMeymand, Gh.(2013). The effects of globalization on the national security of the Islamic Republic of Iran; Amirkabir Publications; second edition; p. 216.