EXPERIENCES OF PRIORITIES OF INVESTMENTFOR SCIENCE AND TECHNOLOGY DEVELOPMENT AT LOCAL LEVEL BY ADVANCING COUNTRIES IN THE REGION

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Abstract:

Priorities of investment for science and technology (S&T) development at local level by other countries in the region are studied on basis of analysis of some components including friendly investment environment, policy environment and shifts of local economic structure. At the same time, the authors conducted studies of lessons by countries in the region to highlight priority policies for local S&T development in short-term, mid-term and long-term visions.

Keywords: *Local; Development investment; S&T.*

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1. Introduction

One of the basic components for analysis of priorities for local S&T development investment is to compare the model and the road map of development of Vietnam and the ones of other advancing countries in East Asia and South-East Asia regions. It would lead to clarify certain main reasons of successful results and limitations in implementation of industrialization and modernization programs of the country and to make recommendations for strategies and policies of socio-economic development and S&T development at local level to be applied to match with development laws, actual status and conditions of Vietnam.

The strongest impacts from local S&T level towards the national development come from aspects of social development and economic growth. The role of local S&T level is seen through various areas such as development, mastering and organization for implementation of application of directly effective and advanced technologies in production-business practice. The S&T application at local level is the basic pre-condition to produce valued products on basis of market demands, and, at the same time, to support the mobilization of comparative advantages at local level *(Ho*

Ngoc Luat, 2013, 2014). A back view to the real status of the world's S&T activities since the second half of the XX-th century shows that the producing capacities always advanced far from market demands, and investments were made for development of producing technologies and then these technologies move to those localities, countries and regions which meet necessary requirements of comparative advantages to secure the competitiveness of produced goods in domestic and international markets *(Dang Huu, 2001; Vu Trong Lam, 2004)*. In this paper, the authors introduce the most basic views in relation to lessons gained from experiences by the countries in the region to highlight orientations and organizational modes for implementation of priorities for S&T development at local level. Then, some connections to actual Vietnam practice will be proposed for consideration of suitable solutions for actual local S&T development in Vietnam.

2. Modes and road maps for local S&T development in recent time

It is possible to say, during the recent 30 years of Doi Moi policy implementation and at local level, we have passed the process of setting-up and improving a model of priorities for S&T development investment which integrates, combines and mixes incomplete development models including:

(1) Friendly investment environment;

(2) Selective approaches public policies;

(3) Changes of economic structures.

The implementation of these S&T development models is not decisive enough and then cannot mobilize maximally advantages of each model. The reasons here are easily seen: these models have mutually conflicting components and then it is very difficult to identify the most optimal and integrated model of development.

The coordination of the above noted models of development with a suitable strategy for local S&T development would create comparative advantages for every stage of local socio-economic development. This is found to be the main responsibilities of policy-making institutions of local Party organizations and State authorities.

Socio-economic statistic figures of Vietnam as noted in Tables 1-3 show well the road maps of development during recent years, particularly since 2005 to now, in various aspects including GDP growth rates, shift of sector structures, development of high and middle level industrial technologies, productivity enhancement, quality and efficiency improvement which do not

pass faster than and basically remain similarly to the ones of other ASEAN advancing countries such as Malaysia. Thailand, Indonesia and Philippines and clearly slower than China in the similar stage of development, despite of continuous efforts during the last 20 years to keep the public investment/GDP rate from 30% to 45%, second ranked to China. This fact shows that the S&T development strategies are not found compatible and the model of investment priorities for local S&T development does not fit development conditions in recent stages.

Table 1. Vietnam GDP growth, 2005-2015 periods

	2005	**2010**	**2011**	**2012**	**2013**	**2014**	**2015** estimated
Actual GDP values (VND thousand billion)	914.1	2,157.8	2,779.9	3,245.3	3,584.3	4,000	4,500
GDP growth rate (%)	7.55	6.42	6.24	5.25	5.42	5.98	6.50
GDP/person rate (USD)	702	1,273	1,517	1,749	1,908	2,053	2,250
Export (USD million)	32,447.0	72,236.7	96,905.7	114,529.2	132,032.9	150,042.0	165,000.0

Source: Vietnam Economic Time Magazine and Nhan Dan Newspaper, 21st October 2015.

Table 2. Shift of economic sector structures of Vietnam

Unit: %

Year	**Total**	**Sectors**		
		Agriculture, Forest, Aquaculture	**Industry, Construction**	**Services**
2005	100	19.3	38.13	42.57
2010	100	18.89	38.23	42.88
2011	100	20.08	37.90	42.02
2012	100	19.67	38.63	41.70
2013	100	18.38	38.31	43.31
2014	100	18.12	38.50	43.38
2015	100	17.50	39.00	43.50

Source: Vietnam Economic Time Magazine and *Nhan Dan* Newspaper, 21st October 2015.

Table 3. Comparison of MVA/GDP rates of Vietnam and other countries in similar development stages

	GDP PPP/person (USD)	**MVA** (USD billion)	**MVA/GDP** (%)
Vietnam (2007)	2454	12.6	24.1
China (1998)	2330	320.0	31.8
Indonesia (1999)	2631	43.2	26.0
Philippines (1994)	2358	13.5	23.3
Thailand (1986)	2817	11.1	23.8

Note: MVA =Manufacturing Value Added
Source: Dr. To Trung Thanh, Hanoi National Economy University, World Bank Development Indicators (WDI) 2008.

3. Experiences of investment priorities for local S&T development by advancing countries in the region and comparisons to Vietnam

Then, the next question is put down: What are the experiences of success and failure the advancing countries in the region have in their activities for establishment of local S&T development model, implementation of S&T development strategies to accelerate the growth rate, to re-structure the economic system, to enhance quality, efficiency and competitiveness indicators of economic activities. These experiences are found particularly important in context of competition from China economy with larger scale and stronger development of local S&T level which let them be workshops of the world with high competitiveness in all the producing technology levels. The next brief consideration provides a presentation of the context they - the advancing countries in the region - were in and the policies they applied according to models of development, and some comparisons to Vietnam.

3.1. Japan and South Korea

Japan and South Korea conducted their export driven industrialization and modernization process, in context of not being required yet to open their economies.

- Model of friendly investment environment: priorities of application for domestic and local enterprises but not for foreign investments;
- Selective model in public policies: priorities and offers of favorable conditions for local enterprises to take initiatives to hold public investment markets;

- Model of change of economic structures: high focus on investments to develop manufacturing technologies.

3.2. ASEAN-4 countries (Malaysia, Thailand, Indonesia and Philippines)

The ASEAN-4 countries conducted their export driven industrialization and modernization process, in context of opening gradually their economies.

- Model of friendly investment environment: priorities of application first for domestic and local enterprises and then for foreign investments;
- Selective model in public policies: priorities but failure of full establishment of favorable conditions for local enterprises to take initiatives to hold public investment markets;
- Model of change of economic structures: not high focus on investments to develop manufacturing technologies.

3.3. China

China conducted its export driven industrialization and modernization process, in context of opening gradually their economies.

- Model of friendly investment environment: the order of priorities of application: first for locally based State-owned enterprises, locally based domestic private enterprises and then foreign investments;
- Selective model in public policies: priorities and offers of favorable conditions for domestic enterprises to hold public investment markets in the following order of priority: first for State-owned enterprises and then for domestic private enterprises;
- Model of change of economic structures: high focus on investment to develop manufacturing technologies.

3.4. Vietnam

Vietnam conducts its export driven industrialization and modernization process, in context of being required to open fast its economy and to conduct the international integration.

- Model of friendly investment environment: priorities of application first for locally based State-owned enterprises and then for foreign investments and domestic private enterprises. Soon, the signed FTAs require the equality between all the types of enterprises;
- Selective model in public policies: incomplete priorities and failure of full establishment of favorable conditions for locally based domestic

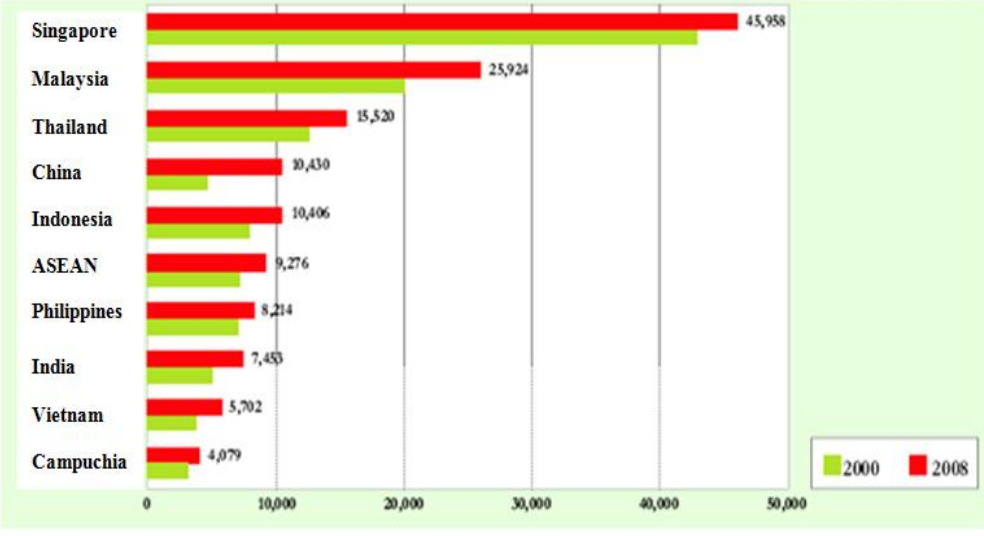
enterprises to hold public investment markets. Soon, the signed FTAs require the equality between all the types of enterprises;

- Model of change of economic structures: high focus on development of investment infrastructures while there is no priority yet to develop manufacturing technologies. The next implementation of FTAs will be the opportunities for strong shift of investments for manufacturing technologies for production of consuming goods and key commodities.

As results of difference in the above noted contexts and development policies as well as the disadvantageous positions in market scales against to China, the industrialization and modernization process of the ASEAN-4 countries and Vietnam gain the lower level of growth rates, economic re-structuring, quality and efficiency of growth, and competitiveness than the ones of Japan and South Korea previously and China presently. The shifting process of economic structures in Vietnam passes slowly. By 2015, the share of labor markets in agricultural, forestry and aquacultural sectors makes 45% of the total labor forces while the productivity of the labors in these sectors is equal to 24% of the industrial sector and 30% of the service sector (Table 4).

In the period from 2008 to now, the productivity of China labor forces overpasses the one of Thailand. The Chinese GDP per capita rate by 2014 was USD 8,000 which is 8 times higher than the one by 2000.

Table 4. Comparison of productivity of Vietnam and some countries



Source: Groningen Department of Conferences and Center of Growth and Development Global Economic Database (January 2010).

The signature by Vietnam of many bilateral and multilateral FTAs of new generation such as Vietnam - South Korea, Vietnam - EU, Vietnam - Russia - Belarus - Kazakhstan, and others, and the implementation of cooperative mechanisms of ASEAN+3 and ASEAN+6 with big partner countries such as Japan, China, India, New Zealand and Australia and the membership to TPP Agreement with 12 nations in the Pacific region will first offer opportunities for growth of export market and development of products of manufacturing industries. In long-term vision, however, Vietnam will face difficulties in development of manufacturing industries since it is required to open domestic markets for products of the same categories from industrialized nations.

According to regulations by FTAs, the State can offer priorities for local S&T development investment through mechanisms of supports for technology import and transfer by enterprises. Therefore, the demands of local S&T development for the period of time from now to 2030 are huge which target the shift of sector structures at local level, reduction of rates of labor forces in agricultural, forestry and aqua-cultural sectors from 45% actually down to 25% by 2030 and enhancement of average productivity in the whole economic system. The local government in Vietnam needs to make efforts to support investment incentives for S&T development so that enterprises are able to sustain international competition and to use maximally market opportunities offered by FTAs and TPP Agreement.

As conclusions

In order to enhance effectiveness of local S&T activities the priorities for S&T development investment need to go in close pace with the Party and State policies and strategies for industrialization and modernization as well as real situation in implementation of these policies and strategies. In the recent stage, the industrialization and modernization process has not been able to achieve the initially defined objectives, namely by 2020 Vietnam basically will become an industrially oriented modern country. The main objective reason comes from unfavorable international contexts and the main subjective reason comes from over-spread uses of central, local and social investment sources. They are used largely for numerous objectives without being well guided and focused on local S&T development, particularly for the sector of production and business enterprises at local level. The shift of economic structures in industrializing and modernizing orientations, and the enhancement of intensive links for higher rate of localization in the chain of industrial added values, particularly of products of manufacturing industries, would create competitive advantages and products to meet demands of public investments and infrastructure

construction of the country. Therefore, as results, the road maps of industrialization and modernization process of Vietnam are not able to meet the demands to catch-up advancing countries in the region and the gap existing for the last 5 years has extending trends. Clearly, the priority of investments for local S&T development would face difficult problems.

The implementation of the both strategies for socio-economic development and S&T development at local level need to stick closely to large opportunities and challenges of deep and global international integration of Vietnam in the immediate future. On this basis, strategies and policies will be issued to guide and to encourage local economic sectors to be focused more for access to, application of and investments for local S&T development which would enhance competitiveness, efficiency, development and extension of production and business activities. However, the key to turn investment sources for socio-economic development and local S&T development in the next stage to reality is itself the enhancement of efficient investments for S&T development in locally based enterprises and the useful contribution for industrialization and modernization objectives of the country, on basis of higher responsibilities of local Party and government organizations, political systems and local community. And for S&T sector, it would be the demands to push up strongly the innovation process of S&T management mechanisms, the shifting process of public S&T institutions to enterprise mechanisms, the removal of mindset of subsidizing and/or being subsidized and the shift to self-governance mechanisms. These demands require huge efforts and strives from all the stakeholders including S&T institutions and State management agencies at the both central and local levels./.

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