MANAGEMENT OF FINANCE SUPPORTS FOR BASIC RESEARCH: CASE STUDY OF SOME COUNTRIES AND LESSONS FOR VIETNAM

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Abstract:

During the recent time, the management of funding for basic research in Vietnam has gained success from positive changes which were recorded by domestic scientific communities. The illustrations of this fact include the increasing number of publications of research papers from Vietnam in high reputation international magazines (ISI journals) (from 352 ISI publications by 2000 to 4,258 ISI publications by 2016), the improvement of the State budget invested for fundamental research (from VND1,508 billion by 2000 to VND17,730 billion by 2016), the development of the research staff in the both terms of quantity (from 1.5 researchers to 2 million researchers) and quality (increase of the total number of citations of Vietnamese sources from the number of 12,347 for 5 years from 2000 to 2005 to the number of 14,763 for the 5 years from 2006 to 2010). This study provides an analysis of models of management of finance supports in some countries among the top ten countries with the highest numbers of publications and some comparisons to the actual status of Vietnam. The study expects to find out strong points of these models of finance supports for recommendation to enhance the quality of support measures for basic research in Vietnam in close future.

Keywords: *Basic research; Finance supports for basic research; Model of management of finance supports for basic research.*

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1. Introduction

According to the Organization for Economic Cooperation and Development (OECD), the basic research is defined as "*Basic research experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view*".

According to the classification of categories of R&D research, the basic research is the initial stage of the chain of R&D activities including the

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basic research, applied research and experimental development. *Hoang Ngoc Doanh (2002)* gave the three specific characteristics of the basic research, namely: (i) Research without targeting concrete application destinations; (ii) Research with multiple inputs; and (iii) Research with the permanent process of accumulation of knowledge. His study also emphasized the roles of the basic research, which he confirms the possible propagation of results of basic research works to become knowledge.

Therefore, it is possible to understand that the basic research plays the role of background to search new discoveries for contribution to the base of knowledge of every nation and the one of the mankind. New knowledge created from basic research are exhibited mainly in form of scientific publications and transferred from a generation to another one of the mankind.

In practice, there exist many different approaches to explain the notions, nature, theories and techniques which set up the background for management practice, namely: according to *The principles of scientific management (Frederisk Winslow Talor, 1856-1915)*, the purpose of management is to know exactly what you want others do and then to realize that the works had been conducted in the best way and with the lowest costs; or, according to *Principles of management (Henry Fayol, 1841-1925)*, the administrative management is the forecasting and planning works in combination with organization of control and check works; or else, according to *Management theory and organizational studies (Chester Irwing Barnard, 1886-1961)*, the management always is the administration of a certain organizational system which has a clear identity of a system and has a purpose to enhance the strength of the systems of an organization. Therefore, the notion of management can be assumed to be as follows: *The management is the process to conduct activities which have separate functions, are closely linked and follow a well defined order, the whole process being oriented to coordinate resources (human forces, materials, finances and information) to achieve the defined objectives with the highest efficiency rate*.

Generally speaking, the management is itself the impacts well organized and oriented to subjects and objects of management works on basis of the most efficient use of resources for achievement of the defined objectives in a permanently fluctuated environment.

The State management of science and technology (S&T) is a form of management works where the subject of management is the State. It is a kind of social management activities of the State power nature which is entitled to

use the State power for government of social relations and behaviors of human activities in the sector of S&T activities. The management of S&T activities appeared as result of requirement to adapt to practical needs of S&T activities. In industrial developed countries, long time ago, the State exercised intervention measures in development of S&T. Now, almost all the nations in the world practice the State management for S&T *(Le Xuan Minh 2012)*.

The State management of finance supports for the basic research is the process of realization of activities (specific functions of finance supports for basic research) by the management subjects (sponsoring entities) towards the management objects (research themes, research projects, research tasks and etc.) in a well defined order and orientation to coordinate available resources (scientists, finances, information, research infrastructure) to achieve, with the highest efficiency rate, the objectives defined for certain stages in basic research activities.

Approaching the topic of management works, this study selected 4 countries among the top 10 nations of the world which have the highest number of scientific publications (ranked by the rating table of publications in website *SCImago* for 2016[2]) for analysis and comparison to the model of management of finance supports practiced actually in Vietnam. The study is oriented to search the most common points between the advanced models which Vietnam is not using actually to propose recommendations to enhance the quality of management of finance supports for basic research in Vietnam in close future.

2. Experiences of finance supports for basic research in some countries

In Europe and the US, the scientific communities use largely the slogan "Publish or Perish" to express requirements towards scientists to produce scientific research results *(Pham Huong, 2017)*. The scientific publications which are expressed by the number of scientific papers published in international scientific journals with the highly reputed redaction peer review system give important contributions in enhancement of the scientific position and potentials of every nation *(Lam Nguyen, 2017)*. Thanks to the roles of contribution to the development of knowledge of the humankind, the basic research is located always in focus of special attentions of every nation when the latter gets involved into the integration process of knowledge economy. These four countries are among the top ten countries which have the highest number of scientific publications, namely: the US,

[2] http://www.scimagojr.com/countryrank.php?year=2016

the first rank, with 601,990 scientific papers per year; the UK, the third rank, with 182,849 scientific papers per year; Japan, the sixth ranked, with 121,262 scientific papers per year; and then Australia, the tenth ranked, with 87,767 scientific papers per year *(SCImago 2016)*. How is the way they do with the management of finance supports for basic research to get these top positions in the rating table?

2.1. Experience of the US model

Differently from other countries, the US does not have the Ministry of Science-Technology but only the Ministry of Education and Training. S&T research activities in the US are conducted mainly under the models of funds. The National Science Funds of the US was established by the 1950 Law on National Science Funds with the duties to push up scientific advances, to promote the national health, prosperity and wealth, and to secure the national defense. The Fund is an agency of the US Government especially in charge to support the sectors of basic research and education in all the non-medical and science-technical fields. The partner of the NSF in the medical fields is the National Health Institute with the annual budget of about USD7 billion. The NSF provides finance supports for about 24% of the total basic research activities supported by the Federal Government under implementation by US universities and colleges. The NSF has missions to provide restricted and competitive supports for applications submitted by communities of researchers. The majority of finance supports provided by the NSF target individual researchers or small sized teams of researchers in universities or freelancers-researchers. In addition to finance supports for scientists, researching students in universities get also grants through summer programs, post-graduate research program (IGERT), support programs for early carrier development (CAREER) which target to stimulate students to start research since the university years.

In the national scale, the finance supports for scientific research are governed by the National Academy of Science (NAS) and the National Science Fund (NSF). These two organizations are not State administrative organizations and they do consulting activities (NAS) and provision of finance support for S&T activities (NSF). The NAS has a network with more than 2,000 leading scientists of the USA which specifically provide consulting activities on directions and policies of S&T development at the federal scale and appraisal services of projects which submit applications for finance supports from the NSF. The NSF provides finance supports for projects and gets the annual operational budgets approved by the US

Congress. The NSF uses this allocated budget to support S&T activities and keeps a small part of the budget for education activities. Almost all the research doing units in the US are laboratories of research institutes or universities. The heads of laboratories have a particularly important position. They are not only to govern research functions of laboratories but also define research orientations of their teams, identify research ideas, look for finance supports from different sources and recruit new research staff *(Tan Kiet, 2013)*.

Regarding S&T research activities, the NSF pays attentions mainly on outputs of researches and do not take too tough considerations for inputs where the management of finance supports by the NSF passes the following stages: (i) Preparation of research topics and plans; (ii) Assessment of research topics and plans; and (iii) Management of implementation of research works.

2.2. Experience of the UK model

The scientific research activities in the UK get finance supports through 7 Research Councils of the United Kingdom (RCUK). Generally, the ways they conduct activities are very similar. However, in some circumstances, they have highly specific features. The annual finances for the RCUK are about GBP7 billion provided from the Government budgets. The RCUK is responsible to the Congress through Ministry of Business, Energy and Industrial Strategy (BEIS) for their missions to provide finance supports for scientific research. The investments by the RCUK for scientific research gain rich successes in S&T fields. As the RCUK statistic data show this country makes only 1% of the population of the world but the finance supports of the country make 3% of the total volume of the world. The outputs the UK scientific research activities are very impressive: 8% of the total number of publications and 16% of the total volume of the most cited research papers in the world *(Helen Niblock, 2017)*.

2.3. Experience of the Japanese model

According to *Statista (2017)*, Japan annually spends USD6.03 billion on science and education activities. Japan is largely recognized not only as an economic power but also as a power in S&T fields. Japan, having no long historical traditions of S&T development as European countries, is economically strong thanks to its S&T base and inversely. In Japan, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and The Japan Society for the Promotion of Science (JSPS) are the two

institutions in charge of organization and management of finance supports for large communities of researchers. The research projects in Japan get finance supports through the funds for research supports under management of MEXT and JSPS, namely:

- JSPS is in charge of control of two groups: (i) Group of scientific research programs; and (ii) Group of activities for encouragement of scientific research. In the first group, the JSPS supported research programs are divided into 4 categories with different schemes of support, namely:
  + Category S: Research of creative and spearhead contents which last 5 years and the granted finance support is USD500,000 per project;
  + Category A: Research of creative contents which last 2-4 years and the granted finance support is from USD200,000 to USD500,000 per project;
  + Category B: Research of creative contents which last 2-4 years and the granted finance support is from USD50,000 to USD200,000 per project;
  + Category C: Research of creative contents which last 2-4 years and the granted finance support is lower than USD50,000 per project.
- MEXT is in charge of the group of research projects with bigger finance supports (about the annual budget of USD1 million per year) which includes:
  + Research programs which are classified as particularly encouraged and are capable of producing excellent outputs. They have the term of implementation from 3 to 5 years;
  + Research programs in priority areas which are capable of creating new and basic directions of science or to give contributions to socio-economic development of Japan. They have the term of implementation from 3 to 6 years and the finance supports from USD200,000 to USD600,000 per research;
  + Experimental research programs which are based on initial kick-off ideas for a research project or research direction. They have the term of implementation less than 3 years and the finance supports lower than USD50,000 per research;
  + Support funds for young scientists which have less 37 years old. They have the term from 2 to 3 years and two levels of finance supports: from USD5,000 to USD300,000 per research for Level A and less than USD5,000 per research for Level B;
  + Support funds for specific objectives which are allocated for important and unexpected research works.

2.4. Experience of the Australian model

Australia spends AUD5-6 billion from the annual budget on S&T research projects. This budget share makes about 5% of the total GDP of the country. Similarly to the model applied in the UK, Australia has two organizations to be in charge of management of research projects and finance supports for them, namely: National Health and Medical Research Council (NHMRC) and Australia Research Council (ARC). Both of them operate as "Council" where the Chairpersons and members are scientists which have the part time status of work and do not get salaries for their positions. The Councils have the teams of administrative staffs recruited by Government organizations, they get salaries for their jobs. The officials from the Government and ministries almost do not have any liabilities and interventions in activities of management and distribution of finance supports by ARC and NHMRC. With the missions of management and control of this huge finance volume the system of distribution of finance supports and management of the budget plays important roles in activities of investment for scientific research for higher socio-economic benefits of Australia.

The above presented models show that, despite of their forms, either Scientific Research Funds or Scientific Research Councils, these countries have some similar points, namely: (i) Long years of experience in activities of management and finance supports for basic research; (ii) Finance supports for basic research, in major parts, come from the Government budgets with big values of support, flexible procedures of finance release and maximal mobilization of capacities and liabilities of support providing organizations; (iii) The formality of evaluation of application files for finance supports exhibits flexible options in joining qualifications and skills of evaluating experts, scientists and scientific council members to offer the most favorable conditions for development of scientific research ideas. The time for assessment of application files is 6 months in maximum which shows the high professional qualifications of support providing organizations of these countries; (iv) The periodic monitoring operation and final acceptance formality are apparently simple but effective which follow a tough procedure of examination and selection of research projects to be granted of finance supports; and (v) The diversity of supports schemes attracts large circles of scientists.

3. Actual status of management of finance supports for basic research in Vietnam

The activities of basic research in Vietnam, in major part, get support finances for implementation of researches from the State budget. The

support volume ranges from 1.3 to 1.85% of the total annual State budgets. According to Ministry of Science and Technology (MOST), the investment from the State budget for S&T sector is about VND17,390 billion by 2015 which makes 1.52% or the total State expenditures and is higher than the one of the previous year *(Economy and forecast review, 2017)*.

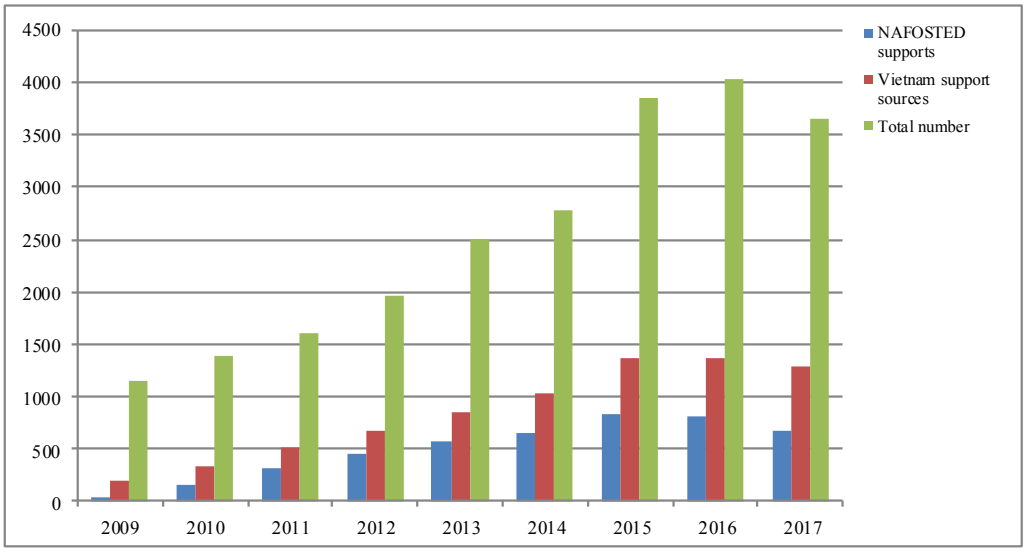
During the recent years, under the guidelines by the party and the State, the finance supports for S&T sector in Vietnam pass innovative changes, particularly a shift of granting mechanism of finance supports for implementation of research projects from supports for S&T tasks to management of support funds.

The National Foundation for Science and Technology Development (NAFOSTED) was established by Resolution No. 122/2003/ND-CP dated 22nd October 2003 by the Government and started the official operation since March 2008. By 3rd April 2014, the Government promulgated Resolution No. 23/2014/ND-CP to replace Resolution No. 122/2003/ND-CP which defines the rules, the organizational chart and operational mechanism of the Foundation.

The Foundation is under management by MOST. The Foundation has the legal status, the registered stamp, the accounts opened in the State Treasury and domestic and foreign banks, and the offices in Hanoi and Hochiminh City. The major part of the Foundation is allocated specially for basic research programs in sector of natural sciences, technical sciences and social sciences and humanities. Since the establishment the Foundation confirms its roles in pushing up the number international publications of Vietnam where the number of scientific papers which get finance supports from the Foundation makes about 20% of the total number of Vietnamese publications and about 60% of the publications supported by different sources of funds in Vietnam.

Table 1. Number of ISI international publications by years and support sources

	Year 2009	**Year 2010**	**Year 2011**	**Year 2012**	**Year 2013**	**Year 2014**	**Year 2015**	**Year 2016**	**Year 2017**
NAFOSTED supports	45	161	324	451	574	658	823	819	668
Vietnam support sources	191	325	509	672	850	1.023	1.360	1.368	1.285
Total number	**1,149**	**1,398**	**1,609**	**1,956**	**2,509**	**2,786**	**3,859**	**4,032**	**3,661**



Source: Nguyen Minh Quan. 2017. Study for evaluation of the actual status of ISI publications of Vietnam, 2007-2016 period. Report of a grass-root level research project.

It is worth to note that despite of good records of acceleration of the growth rate of international publications of Vietnam, in the regional scale Vietnam is the 4th ranked country in terms of international publications.

Table 2. Comparison of ISI international publications of Vietnam and the ASEAN countries (2010-2015).

The order is based on the number of ISI workshops (Sector of Social Sciences and Humanities)

No.	Country	Year					
		2010	2011	2012	2013	2014	2015
1	Singapore	32	32	29	29	30	31
2	Malaysia	36	26	20	16	19	25
3	Thailand	37	37	37	35	36	42
4	Vietnam	63	67	65	61	64	60
5	Indonesia	60	60	54	45	44	36
6	Philippines	75	76	68	73	74	68
7	Cambodia	129	127	129	146	144	122
8	Laos	144	145	134	144	132	151
9	Brunei	136	138	126	110	118	101
10	Myanmar	138	132	118	135	140	137

Source: Research team Metrics for Vietnam Sciences (S4VN). Summary from Web of Science (7th July 2016)

Then, what to do to enhance our position, for example the 3rd rank, among top ASEAN countries in terms of publications? First, we can identify some reasons, namely: (i) Specific political and cultural characteristics in management practice (NAFOSTED under management by MOST); (ii) Finance supports from NAFOSTED for research remain limited (the average rate ranges from VND800 million to VND1 billion for a duration of implementation from 24 to 36 months) *(Do Tien Dung, 2016)*; (iii) The scientific council of the Foundation is not flexible enough in dealing with narrow fields or interlinked fields of disciplines; (iv) Lack of links between support providing organizations, scientists and the scientific council in process of examination and appraisal of submitted application files for finance supports; (v) Support programs remain restricted in forms of support schemes then do not attract many researchers. Are these reasons the differences which limit actually the push-up of support measures for basic research in Vietnam?

The following table gives a comparison to see clearly similarities and differences in management practice of finance supports for basic research between Vietnam and the above presented countries.

Table 3. Summary of comparison of management practice of finance supports for basic research between Vietnam and some countries

No.	Items		US	UK	Japan	Australia	Vietnam
1	Model of finance supports and beneficiaries	Similarity	+ Beneficiaries are scientists through research organizations including research institutes, universities, laboratories and etc. + Finances coming from the State budget.				
		Differences	Model of NSF	Model of research council of RCUK	Model of scientific research funds (MEXT) and (JSPS)	Model of National council of scientific research (ARC) and National Health Council (NHMRC)	Model of NAFOSTED
			No MOST; Federal scale of operation supported by NAS and NSF in consulting service and direct finance supports for large circles from	Classification of support schemes and programs on basis of various rate of finance supports; Two levels of finance supports	Many levels of finance supports for various categories of research including spear head research, creative research, encouraged		Management by MOST; no classification of support schemes and programs on basis of finance levels and scales in basic research activities.

No.	Items		US	UK	Japan	Australia	Vietnam
			researching students to scientists through research projects of universities, research institutes and laboratories.	(lower and higher than GBP5 million).	research, priority research and etc.		
			Finance supports are directly granted by NSF through approval by the President and the National Congress. The US provide supports for scientific activities with USD7 billion per year.	Finance supports for scientific activities are about GBP7 billion per year through the State budget.	Japan allocates USD6.03 billion per year (3.5% of GDP) as finance supports for science and education activities.	Australia spends AUD5-6 billion (5% of national GDP) on S&T projects.	Vietnam spends about USD82 million as finance supports on S&T activities.
2	Formality of application, presentation of files of research	Similarity	+ Applications are submitted directly on-line including the presentation of application files for the full process. + Form sheets are available.				
		Differences	No hard copy submitted.	No hard copy submitted.	Hard copy is submitted through the research hosting organization (tough control and careful redaction works before submission to JSPS and MEXT).	Guiding instructions are provided to scientists for preparation of application files.	Guiding instructions are provided to scientists for preparation of application file. The on-line submission is accompanied with the submission of a hard copy
			No rules for the number of pages in the presentation of application files	Number of A4 size pages for every item clearly regulated.	Number of pages for every item clearly regulated.	Number of pages for every item clearly regulated, clear presentation of finances and explanation of	No rules for the number of pages in the application files

No.	Items		US	UK	Japan	Australia	Vietnam
						expected outcomes are required for every item.	
			Duration of implementation of a research project is 1-5 years.	Duration of implementation of a research project is 1-5 years.	Duration of implementation of research projects vary according to volume of granted finances. Maximal duration: 6 years.	Duration of implementation of a research project is 1-5 years.	Duration of implementation of a research project is not exceeding 3 years.
3	Examination and evaluation of presentation of application files	Similarity	+ Time of 6-8 months for examination and appraisal works. + Presentation of application files evaluated through two rounds				
			+ No fixed scientific councils; + Consideration of capacities of projects leads on basis of scientific publications during the last 5 years; + Interaction between project leads and sponsoring organizations during examination of presentation of research contents; + Consulting experts, examination committees and scientific councils do not get remunerations for examination and evaluation works. Sponsoring organizations pay only transport fess for long travel (if any) of scientific council members.				
		Differences	+ Proposal for supports → Evaluating experts → NSF contact project leads for change of finance support volume (from ±10% up) → Appraisal by scientific council (NSF does not have fixed scientific councils).	+ Proposal for supports → RCUK → Selection of evaluating members by RCUK secretary → evaluating experts → evaluation by independent experts → Evaluation results to project leads (1 week time for reply by lead projects) → Establishment	+ proposal by project leads → Fund offices → Round 1: send to independent experts (3-6 evaluating experts) → Round 2: send to evaluating teams of 2-10 members. For large projects, after having passed Round 1, project leads present application files directly to the council and	+ Application files appraised through two steps. Step 1: 3 evaluating experts are invited. Step 2: After getting results from the 3 experts, the selection committee informs project leads who have to send reply within 2 weeks to questions set up by independent	Fixed scientific councils by mandate, Council members get remunerations for evaluation works (travel and accommodation fees for evaluation meetings). Scientific council members together with independent experts to work in the two rounds of evaluation-selection. No

No.	Items		US	UK	Japan	Australia	Vietnam
				of evaluation committee (1-10 score rating).	answer their questions in Round 2. The time for QA session is fixed.	experts. The council established and the 1-100 score rating scale applied for projects. The list of projects examined and evaluated by scientific councils sent to Minister of Health for approval.	interaction between project leads and supporting organizations during evaluation process.
4	Financial appraisals	Similarity	+ Finances granted for implementation of research works not including finances for scientific labor. + Needs to consult views by project leads before conclusion of financial evaluation and consulting of research projects.				
		Differences			Priority of finance supports for research projects under on-going implementation		Finances for labor make 40-60% of the total finances for implementation of projects
5	On-going management works	Similarity	+ Control of work plans of researchers carried out by on-line systems. Supporting organizations and scientists lined closely through these systems.				
		Differences	Finance directly granted to research teams	Finances granted through hosting organizations			Finances granted through research organizations
6	Periodic reports and final evaluation report	Similarity	Periodic reports and final report exhibited on the systems so that supporting organizations can monitor and update the schedule of implementation .				
		Differences	+ No periodic reports	+ Management of reports according to finance support volumes. For projects with supports from GBP5 million up there are expert teams for periodic evaluation. For lower	+ By end of financial year, project leads submit reports for achieved results (mainly including scientific publications and papers) following toughly provided form sheets. For small projects,	+ Compulsory periodic reports according form sheets of 10 pages which are sent to NHMRC or ARC including scientific papers and publications	+ In addition to the on-line monitoring system, projects are required to submit 1 hard copy certified by project hosting organizations to supporting organizations. Periodic reports and annual

No.	Items		US	UK	Japan	Australia	Vietnam
		Differences		GBP5 million supported projects, the schedule needs to be updated according to rules.	leads are required to update results with made publications. For large projects, leads are required to present to scientific councils, the adjustment of granted finances depends on quality of reports by project leads.		financial check required.
			+ There is periodic evaluation, only the final report of research to be submitted to the on-line systems. + No options for withdrawal of the granted finances (in case the projects do not complete fully applied application files)				Evaluation of research results according to rules and procedures as evaluation and selection procedures do. Granted finances to be withdrawn if projects concluded as NOT ACCPETED

4. New proposals for management of finance supports for basic research in Vietnam

On basis of management practice of finance supports for basic research in other countries, some lessons and suggestions can be made for Vietnam, namely:

First: The most known typical models of finance supports for basic research are the model of funds (US, Japan) and the model of research councils (UK, Australia) as presented above. Here we see the application of two different models but the management practice of finance supports for basic research is conducted always through three stages including the submission of application files, examination and selection of research projects to be granted and management of post-granting implementation of research

works. In every stage, there are common points in management practice from these four countries, namely:

- Proposal of research projects: the US and the UK show well their traditional advantages of long history of finance supports for research projects. The research project hosting organizations in Australia and Japan show well their professional practice in joint preparation of application files where research project leads themselves deal with formality procedure for finance supports.
- Examination, evaluation and selection of application files:
  + The four countries exhibit well interactions between finance support providing organizations and research project leads before making the decision *for granting finance supports or not*;
  + The process of examination, evaluation and selection of application files attract attentions of reputed scientists through their volunteer participation (finance support providing organizations do not have to pay any remunerations for their evaluation works but only fees for travel and accommodation in necessary cases);
  + Scientific councils (if any) are established in flexible manner on basis of specific needs of research projects;
  + Rich databases of scientists get permanently updated.

The process of evaluation of application files is conducted on basis of volunteer participation of highly reputed scientists in concerned fields where the finance support providing organizations do not have to pay any remuneration for their works.

- Monitoring the implementation process:
  + Not almost all the countries conduct periodic evaluation procedure of the projects which get small size finance supports (according to criteria of classification of every country);
  + The publication of research results in reputed professional journals with the peer review system is the compulsory requirement for research activities. Therefore, the scientific publications in conformity to international standards should not be included in the rules of finance supports. Scientists always consider the publication of research results as crucial criteria in their competitions to gain finance supports for their researches.

Second: The division of the total budgets for finance supports into multiple levels helps diversify support programs and to attract attentions from more

researchers. The flexibility in definition of the level of finance supports and the time for implementation of research projects would help enhance the feasibility of targeted objectives.

Third: Even not conducting the acceptance formality for support granted research projects, the finance support providing organizations have their ways to control toughly the implementation stage of research projects they provide supports with and the records would be used for the next offer of finance supports.

Some proposals for Vietnam

On basis of lessons learnt from experience of the four countries, this study can make proposals for some solutions, namely:

- Proposal of research projects:
  + The research hosting organizations together with project leads should participate together in process of improvement of application files to be submitted to the support providing funds.
- Examination, evaluation and selection of research projects:
  + The finance support providing organizations, within the allowed limits, should call scientists for their volunteer participation as evaluating experts. This would reduce costs for assessment of application files;
  + The finance supports should be divided into various schemes of support volumes which allow to diversify granted research projects and to attract more researchers. The scheme and the groups of granted finance supports would let define the duration of implementation of granted research projects;
  + The time of evaluation procedure should be shortened so the total time from the announcement of support offer to the signature of support contract does not exceed 6 months as it is the large practice by numerous finance support providing organization in the world;
  + The interaction between finance support providing organizations and research project leads should be encouraged for review of research contents and financial appraisal formality before making decision of finance supports.
- Monitoring of the implementation stage
  + The scheme of periodic and final evaluations should be improved. In case if a research project does not pass the final acceptance procedure

and the decision is made for withdrawal of support finances (if any) it is necessary to introduce criteria for identification of concrete reasons of the failures of the research project.

- The presentation of application files for finance supports should add a section for description of impacts of the submitted research projects to the related sectors as well as socio-economic development.

5. Conclusion

The most remarkable points in management practice of finance supports for basic research in some advanced countries show that the management works of finance supports for basic research actually can come from many different models. The models may be different in their ways of application but the most remarkable points of them include:

- The model of funds (US, Japan) or the model of the research councils (UK, Australia) the common procedure in management practice of finance supports for basic research follow three main stages: (i) Preparation of the presentation of application files; (ii) Examination, evaluation and selection of application files; and (iii) Management of finance supports;
- The efficient operation of the presented models of management practice of finance supports for basic research shows that, for successful application for finance supports for scientific research projects, everyone in the three stages has its own importance, namely: (i) The research plan presented in the application file, if being prepared carefully and adequately, would require not only the qualification and capacity of project leads but also the supports from the project hosting organizations (the experience of Japan shows that the representatives of these organizations take part in assessment and completion of the research plans and application files before their submission to finance support providing organizations (on-line systems, on-line provided form sheets, detail requirements and etc.). All of these moves would assist scientists in the fastest and most effective ways of access to support sources; (ii) The selection of independent evaluating experts for examination of application files and the selection of the scientific council members have the crucial roles for quality of support activities. The process of examination, evaluation and selection of research projects (even having or not having the fixed scientific councils) is to be conducted on basis of objective, transparent and equal criteria. The clearly set-up criteria are one of the deciding factors for higher efficiency of support activities; (iii) The management practice of finance supports conducted in the advanced

countries does not include the evaluation of research results for acceptance formality. Vietnam should consider for improvement in its program of finance supports for basic research.

The most remarkable point in the lessons Vietnam should get from the models applied by the advanced countries is to set up a system which would allow: (i) Links between scientists and project hosting organizations in preparation of a quality application file to submit to support providing organizations; (ii) Enhancement of the role of volunteer participation of scientists as advisors for support providing organizations. The targets of this participation of experts would be a higher diversity of schemes of supports, better quality of examination, evaluation and selection works, impartiality and objectivity of decision making process for granting supports; and (iii) Reduction of the volume of administrative formalities in monitoring activities. The final acceptance evaluation work by support providing organizations should be conducted on basis of concrete criteria for identification of reasons of failures which would lead to adequate options of withdrawal of the finances already granted for the research projects./.

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