CRITERIA FOR EVALUATION OF POLICIES FOR PROMOTION OF INNOVATION BY ENTERPRISES

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Abstract:

Innovation is one of important factors to help enterprises in enhancing their competition positions and then pushing up fast and sustainable socio-economic development in international competitive markets. This fact is internationally acknowledged largely. In actual global competitive context, enterprises are facing a tough choice: innovation and R&D or bankruptcy. Supports from the State through policies and mechanisms are important driving forces to push enterprises to do innovations for development. The set up of criteria for evaluation of policies for promotion of innovation by enterprises has highly important roles for decision making by individuals or organizations. This paper is to give answers to the following questions: (i) What are policies for promotion of innovation by enterprises? (ii) What are factors which make impacts to policies for promotion of innovation by enterprises? and (iii) What are criteria for evaluation of policies for promotion innovation by enterprises?

Keywords: Innovation; Policy; Evaluation of policies; Enterprise.

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1. Overview

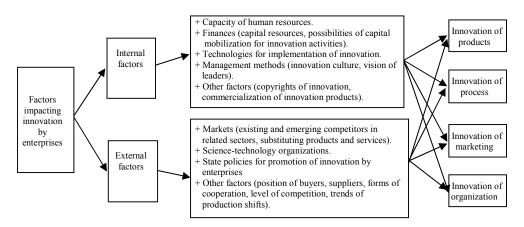
1.1. Innovation

Innovation is activities where enterprises implement a new product, process, method or system to create new markets or new industrial organizational forms. In this concept the accent is focused on process of innovation and output results of innovation (product, process) (Schumpeter, 1934). Zahra and Covin (1994) considered innovation as deciding factor for existence and development of enterprises. Innovations are rich in their forms. According to OECD (2005), innovations are divided into renovation

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of product, process, marketing method and organizational structure. This classification is largely applied by the prestigious organization which helps unify the concept of innovation and issue standards for all the nations in the world to conduct surveys on innovation by enterprises.

Innovation helps enterprises enhane productivity, quality and added values of their products and services, and orients enterprises to sustainable development. While considering factors to impact innovation by enterprises, we can identify the internal factors such as R&D, production and marketing activities, common vision and innovation willing of leaders, suitable organizational structure, key individuals, effective team working practice, creative environment, trustful and open relations, acceptance of risks and freedom, and external factors such as suppliers, customers, competitors, relations with universities, research organizations and Government agencies (Nham Phong Tuan, 2016). These factors are presented in Fig. 1.



Source: The team of authors

Figure 1: Factors impacting innovation by enterprises

Innovation gets impacted from various factors including internal and external ones which include also research results from universities and research organizations, pressures from suppliers and customers and even competitors from other countries and territories. Among them, State policies are those important factors which impact heavily innovation activities by enterprises.

1.2. Notion of policies toward innovation by enterprises

Policies are defined as well targeted process of actions by one or some actors for settlement of their concerned problems (James E. Anderson,

1983). Policies are sets of measures institutionized by controlling or administering actors to offer privileges to some social groups, to activate motivation of their actions, to orient their actions for realization of certain priority targets in development strategies of a social system (Vu Cao Dam, 2011). Policy-based approaches under National Innovation System (NIS) gain attentions and applications by many experts and policy makers to cover market defects. Many studies have used NIS concepts and approaches for actual contexts of developing economies and economies under industrialization, such as works by Nelson (1993), Lundvall (1992) and others. International organizations such as Asia-Pacific Economic Cooperation (APEC) and Asia-Pacific Center for Technology Transfer (APCTT) also issue initiatives to promote these approaches by country-members for activation of innovation.

The starting point of innovation is creation of knowledge for users to get access to and use knowledge. This causes certain influences to benefits of enterprises from different views. First, social benefits of the entire society are higher than the own benefits of single enterprises since customers and competitors also get benefits from innovations made by enterprises. Second, the created knowledge cannot be the own asset of enterprises, cannot bring in the full benefits of enterprises and then do not stimulate enterprises to do innovations. Since scientific knowledge have specific features of commercial commodities then they easily lead to market failures such as various risks and high costs. Therefore, State policies, as tools, would support enterprises to conduct innovations through various measures such as direct supports for research, particularly fundamental ones, granting of patents, issuance of comfortable business environment for enterprises, stimulation of investments and provision of taxation incentives and low interest loans.

Policies for promotion of innovation by enterprises can be interpreted as State interventions through stimulating measures (economic, administrative and moral tools/measures) up to operational activities of enterprises to target comfortable environment for enterprises to conduct innovations on basis of global orientations of development of the country. Policies get institutionized under forms of laws and ordinances, and sub-law regulations such as decrees, resolutions, directives, and circulars by the Government. Innovation activities by enterprises are found regularly under context of a common system - National Innovation System - where the State applies policies to balance development process, controls resources and social conflicts, creates comfortable environment for socio-economic activities, all

targeting promotion of innovation by enterprises, activation and enhancement of effective outputs of innovation activities.

1.3. Factors impacting policies for promotion of innovation by enterprises

A policy includes basic elements such as background for issuance, targets, subjective figures, principles for realization of targets, solutions and tools for implementation (*Doan Thi Thu Ha, Nguyen Thi Ngoc Huyen, 2010*). Therefore, there exists many ways to define factors which impact policies on basis of policy approaches.

For public policies, the factors impacting the process of their formation include changes within leading positions or regimes, participation of social communities and stakeholders, conditions required by financial and technical sponsors, long term visions, technical management skills, political orientations, rules of support and global resources, distribution and control of resources. Among them, the political orientations are one of the most important elements to impact formation and implementation procedure of public policies. Technical supports from sponsors going together with offered conditions cause strong impacts to formation and implementation of public policies. The regime changes do not make any impact formation of public policies but causes considerable impacts to implementation of policies. Some forms of competition are observed between political regimes for acceleration of implementation of policies (Salahuddin M. Aminuzzaman, 2015).

Under procedural approach, policies get impacted from many factors including innovation knowledge and activities, social-political-economic context, legal regulation framework, actual events, institutional impacts and external impacts. Innovation knowledge and activities cause impacts to policies through catalysing actions for debates or set-up of awareness of new opportunities. Policy makers always base their considerations on social-political-economic contexts for political stability and national development, extension of international impacts and development on basis of available resources and administrative modes for management of environment and policies. Policies depend on institutions which have well defined organizational structures and tasks such as central government agencies, local administrations, non-government organizations (NGOs), private sector, political parties and organized religious organizations. Also, policies get impacted from external factors such as sponsors, international treaties and agreements, mass media and events (*POP*, 2009).

A policy when introduced to practice gets impacted from numerous objective and subjective factors which can push up or prevent it from

implementation. Objective factors include the ones presenting essential features of problems to be treated, actual contexts, political and economic potentials of targeted object groups and population. Subjective factors include organizational machines for implementation of policies, administrative institutions and level of impact to attitude and behaviour of population. When the policy targets the settlement of a complex problem related to many sectors and causes it needs to coordinate with many interlinked policies and decisions. Policies are seen through legal documents from central level to local one. They create legal environment for implementation of policies, stability, order procedures for involvement of administrative organizations and policy impacted groups. implementation of a policy it is necessary to train human resources for implementation of its contents and requirements. This work relates to propaganda and dissemination of benefits from the policy among population circles as well as evaluation of impacts from the policy through survey or feedbacks for policy adjustments. In addition, the factors related to traditional culture features cause also impacts to implementation of economic policies (Doan Thi Thu Ha, Nguyen Thi Ngoc Huyen, 2010).

For evaluation of impacts of policies, politicians and policy makers expected that the evaluations should be based only on quantified evidences and avoid partial treatment for conclusion. The evaluation work should be conducted in global manner and contain full information on contents from policy makers which can be used for reference during debates of political decisions (Burdge, 1987). Information contained in the report of evaluation of impacts should have concrete targets for planning procedures which should help decision makers to avoid or mitigate negative impacts (Soderstrom, 1981). Decision makers have top important roles because they receive all necessary information and have trends to treat them under their planned vision (DiMento, 1982). Many research works related to decision making process show that information feedback is not provided in unified manner or commonly applied rules with some partial reflections and abuse which lead to incorrect assessments (Kahneman, Slovic, Tversky, 1982; Nisbett, Ross, 1980).

On basis of component elements of policies, every stage of implementation process has inter-linked impacts. Policy makers should conduct a clear analysis of inter-impacting factors to provide the most exact information for the process of formation of policies. Particularly, the large policies have to be put into agendas of the National Congress. Regarding policies related to promotion of innovation by enterprises, administrative subjective figures are State agencies and administrative objective figures are enterprises. For introduction of policies into practice it is necessary to study objective and

subjective figures for promotion of innovation by enterprises and for limitation of impacts from preventing factors. Objective figures include factors presenting the nature of problems to be treated which are, in this case, the promotion of innovation by enterprises for enhancement of their competitiveness and the national one in perspective of the 4.0 revolution as well as enhancement of political and economic potentials of the policy targeted groups and population. The subjective figures include the organizational units in charge of implementation of policies, administrative institutions, financial resources for implementation, propaganda works and impacts to attitude and actions of population. Policies for promotion of innovation by enterprises would have impacts to innovation activities by enterprises including innovation of product, process, marketing method and organizational structure to achieve the made targets.

2. Policies for promotion of innovation by enterprises

Policies for promotion of innovation by enterprises can be classified in different ways such as solutions to impact objectives, tools, levels to issue policies, policy objectives, policy objects, scopes of impacts from policies, areas under impacts from policies and various component parts of policies.

Policies for promotion of innovation by enterprises are divided into 4 main groups on basis of main areas of innovation, namely: innovation of product, process, marketing method and organizational structure.

2.1. Policies for promotion of innovation of product by enterprises

Policies for promotion of innovation by enterprises in terms of products relate closely to planning works and strategies for competition and development of enterprises. Innovation of product plays important roles where it is considered as background for existence and development of enterprises. Right policies for promotion of innovation of product by enterprises is the starting point of success of enterprises because only after the successful set up of policies for innovation of products by enterprises they can identify orientations for investment and studies for design of new products. In order to promote innovation of products by enterprises, the State should issue policies toward financial supports for studies, technical supports for research, joint cooperation with partners, policies and mechanisms for R&D works, technical infrastructure and finances for innovation of products (Sabet, SM, Heard, AC, Neilitz, S and Brown, AN, 2017), all targeting the renovation of existing products or creation of new products.

So, policies for promotion of innovation of product by enterprises should be understood as the ways the State make direct or indirect impacts to enterprises through State administration agencies and related legal documents. They should support enterprises to innovate products through use of better materials, stimulation of diversity of products in accordance to trade agreements, promotion of development of material sources for localization of products, promotion of new designs and supports for higher quality of human resources involved into innovation of products through use of taxation and credit tools.

2.2. Policies for promotion of innovation of process by enterprises

Actually, producing enterprises apply many automated production lines where the production activities are controlled by programs, supported by information technologies and computers and, in higher level, production-business decisions are supported by information technologies. In addition, producing enterprises pay more attentions to control of costs for every function, management stage and saving of time, resources and materials (Frederick W.Taylor, 1911). With targets to support enterprises in innovation of process, the State should have policies, direct or indirect, to support stages of production activity and distribution of products and service of enterprises.

Therefore, policies for promotion of innovation by enterprises in terms of process is understood as the ways the State, on basis of science and technology progress, make impacts to enterprises through various forms of supports such as change of production modes and stimulation of management of value chains from material supply to distribution of products, supports for shifting production modes from simple techniques to integrated technologies, promotion of renovation of production process through tools of productivity and quality, use of environment friendly technologies, mastering and application of new technologies, application of new advances for production process, access to information sources, promotion of inspection and quality control works, overcoming of trade and technical barriers, training of higher quality of human resources and financial supports though taxation and credit tools.

2.3. Policies for promotion of innovation of marketing method by enterprises

During recent years, innovation has changed mindset for development of products and services by enterprises (*Chesbrough*, *Henry William*, 2003). Innovation has been seen in new ways with changes of trade models and adaptation to changes to promote better products and services (*Theodore*)

Henderson, 2017). In context of internationalization and integration in the world's economy, producing enterprises need to follow rules and practice of international trades and have to get impacted from political situations. For promotion of innovation of marketing method by enterprises, the State should provide supports for enterprises through market analysis and forecast by research organizations, competition reports, intermediate distributors, demand-supply links and, particularly, analysis of political, legal economic, technological, social and cultural environments for efforts to extend external markets.

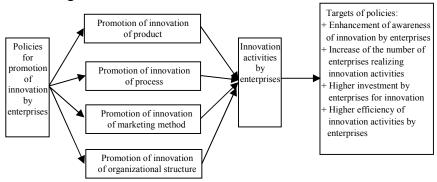
Therefore, policies for promotion of innovation by enterprises in terms of marketing method are understood as the ways the State make impacts to enterprises through State agencies and organization for extension of export markets, extension of domestic markets, application of financial policies (taxation, credit), stimulation of introduction of products into market through completed infrastructure of electronic trades, extension of trade representatives and use of trade arbitrage service in external markets, stimulation of dissemination and registration of trademarks, promotion of trade exhibitions and fairs, and training of higher quality of human resources to innovate selling activities.

2.4. Policies for promotion of innovation of organizational structure by enterprises

Innovation of organizational structure and management methods in production-business activities would help enterprises achieve higher economic efficiency and self-governance in decision making process. For promotion of innovation of organizational structure by enterprises, the State should issue suitable policies to meet needs of innovation of technologies which play increasing roles for enterprises. They should extend policies toward human resources to meet requirements in management skills, set-up of innovative eco-systems for sharing of knowledge resources and changes of enterprise cultures as well as new needs in terms of human resources and technologies between components in eco-systems.

Therefore, policies for promotion of innovation by enterprises in terms of organizational structure are understood as the ways the State makes impacts, direct or indirect, to enterprises through State administration agencies and systems of regulation documents to encourage enterprises to change organizational structures, to move production sites to suitable clusters for enhancement of competitiveness and to use of higher productivity and quality tools, renovation of management modes, development of production activities in direction of value chains, application of modern modes of production control and set-up of integrated industrial clusters.

As summary, the policies for promotion of innovation by enterprises are presented in Fig. 2.



Source: The team of authors

Figure 2: State policies for promotion of innovation by enterprises

Policies may get evaluated before or after their promulgation. For decision makers, the evaluation made in advance appears more important. The incorrect assessment would lead to policies with undesired outcomes for policy makers. Deviations in implementation of policies would occur when policy makers estimate relative costs and benefits from policies and their wrong assessments should be particularly serious when the issued policies could lead to negative impacts to health and wealth of future generations or environmental pollution (Katherine A. Lyon, 1990). Therefore, it is necessary to have criteria for evaluation of impacts from policies for promotion of innovation by enterprises.

3. Criteria for evaluation of policies for promotion of innovation by enterprises

The 2015 Law on issuance of legal documents and Resolution No. 34/2016/ND-CP by the Government stipulated some articles and measures for implementation of the Law where they require the files submitted for setting-up of laws and ordinances have to present the contents of the related policies and the impacts from their implementation. But these documents do not provide concrete regulations as criteria for evaluation of policies. The evaluation of policies is the work to get information about objects of policies, being based on certain criteria. The objectivity of evaluation outcomes depends on evaluating subjective figures, ways and criteria for evaluation. Therefore, it is necessary to build up criteria for evaluation to get quality results which are really valuable for decision making process.

The criteria used for evaluation of policies are also multiform. In evaluation of implementation of public policies some basic criteria are used such as validity, effectiveness, fair treatment, sustainability, impacts and settlement rate of policies (Nguyen Dang Thanh, 2012). For evaluation of policies in relations between two nations, the criteria include validity, effectiveness, feasibility, economic aspects and fair treatment of policies (Nguyen Thi Ngoc Hoa, 2018). Regarding policies for promotion of innovation by enterprises, the criteria for evaluation have to identify clearly targets, objective and subjective figures of evaluation, scope, principles and data sources used for evaluation, and individuals and organizations responsible for evaluation outcomes. The evaluation of policies for promotion of innovation by enterprises can be conducted by authorities, organizations and individuals on basis of criteria for evaluation such as validity, effectiveness, suitability and sustainability of policies to define strong points and shortcomings of policies. And then measures are conducted for revisions, amendments, additions and completions of existing policies or issuance of new policies to substitute unsuitable policies for effective and integrated implementation of solutions for promotion of innovation by enterprises.

3.1. Criteria for validity

The validity can be understood as to reflect the real targeted impacts and operability of a policy on basis of consideration of costs, benefits, budgets, resources and other conditions. The validity of policies requires the conformity and application of all the related regulations. The validity of policies for promotion of innovation by enterprises is measured by the rate of effectiveness of achieved activities in comparison to defined objectives including the rate of use of resources, technical tools and measures for implementation, the consensus and conformity of impacted figures. The validity of policies for promotion of innovation by enterprises can be classified according to the time of issuance, scope of impacts, issuing authorities and objects of application.

The identification of validity of policies for promotion of innovation by enterprises can be made through beneficiaries and impacted figures, assessments by experts and independent evaluating agencies. It is also evaluated through component policies for product, process, marketing method and organizational structure.

3.2. Criteria for effectiveness

The effectiveness of policies is to reflect the comparative relations between gained outcomes and used expenditures. Effectiveness of policies is

measured by the size of gained outcomes compared to the used of defined resources. Analysis of costs and benefits for definition of effectiveness of policies, without considering effectiveness, would lead to wastes and losses of State budgets.

Effectiveness of policies for promotion of innovation by enterprises is considered on basis of actually achieved outcomes in activities of innovation and input expenditures. Input expenditures of policies may include costs for implementation of policies and investment volumes for innovation such as operational costs of enterprises for their innovation of product, process, marketing method and organizational structure. Real outcomes of policies for promotion of innovation by enterprises can be seen through the volume of turnovers gained by commercialization of innovated products, process, marketing method and organizational structure as well as gained interests in terms of benefits, human resources, export values and etc.

In addition, effectiveness of policies for promotion of innovation by enterprises is also considered through their impacts toward economic, cultural and social aspects which are not easily defined quantitatively in terms of costs and gained outcomes. These items cannot be measured directly and quantitatively due to not-easy-to-be defined qualitative propagation of innovation activities. They can be defined by global assessments of enterprises and socio-economic experts.

3.3. Criteria for suitability

Policies for promotion of innovation by enterprises need to reflect the suitability to development strategies and innovation plans of enterprises, organizations, local administration, countries and regions. They have to fit assigned functions, duties and authorities of State administration agencies in charge of innovation in enterprises, issued policies, policies by higher ranked organizations and international engagements.

Suitability of policies for promotion of innovation by enterprises has to fit targets of national socio-economic development. These criteria need to be evaluated from views of both the State and enterprises in conformity to formalities and procedures of registration for taxation incentives and other supporting measures.

3.4. Criteria for sustainability

The sustainability of policies for promotion of innovation by enterprises is seen through creation of positive and long lasting impacts and balanced state between related parties. For evaluation of sustainability of policies for promotion of innovation by enterprises it is necessary to examine long lasting positive impacts to objective figures (individuals and organizations) and global socio-economic development of the country as well as their negative impacts in these aspects.

Evaluation of sustainability of policies for promotion of innovation by enterprises is a complex work due to difficulty of quantitative definition of their positive and negative impacts. Therefore, it is possible to evaluate sustainability of policies for promotion of innovation by enterprises through assessment by objective figures, beneficiaries and related parties. As example: Sustainability of policies for promotion of innovation by enterprises in textile-garment sector in Vietnam is evaluated through assessments by enterprises such as: (i) Rate of impacts from provision of information on textile-garment industrial clusters to innovation activities by enterprises; (ii) Rate of planned material supplying zones to meet demands of innovation by enterprises; and (iii) Rate of training support programs through universities and vocational colleges to meet demands of innovation by enterprises in terms of high quality human resources. Sustainability of policies for promotion of innovation by enterprises in textile-garment sector in Vietnam is evaluated also by State administration agencies, namely: (i) Positive effects from support policies for management of value chains; (ii) Positive impacts from taxation and finance policies toward innovation activities by enterprises; and (iii) Positive outcomes of supports for enterprises to carry out quality inspection and control works (to overcome trade and technical barriers) and forecasts of new production trends.

Recently, according to Circular No. 04/2018/TT-BKHCN on 15th May 2018 by Ministry of Science and Technology governing science-technology statistic surveys, outside of national programs of statistic surveys, the innovation survey of enterprises is to be conducted every 3 years. However, policies related to stimulation and supports for innovation by enterprises are not evaluated in terms of validity, effectiveness, suitability and sustainability.

4. Conclusions

Innovation activities by enterprises have deciding roles for competitiveness at enterprise and national levels. In Vietnam, leaders and policy makers get aware deeply of this when promulgating policies toward stimulation and supports of innovation activities by enterprises. However, the evaluation of policies for promotion of innovation by enterprises needs to be based on fundamental elements of policies such as backgrounds, targets, objective figures, principles for implementation, component policies, solutions and tools for realization of targets, and evaluation of eventual impacts toward

innovation activities by enterprises. The evaluation has become just and urgent requirements in a society with trends of democratization in its development. They also create solid platforms for development of administration by the State toward enterprises in its orientation to become a State really of people, by people and for people./.

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