SOME ANALYSES OF THE INNOVATION PROCESS

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Abstract:

This paper examines the fundamental aspects of the innovation process. These include the transformation steps from input factors to innovation outcomes, the various states of connection between the innovation process and the production and business process, the implementation of innovation through production and business activities, and policy interventions in the innovation process. The innovation process is further clarified through analysis of key elements, such as the actors involved, the associated benefits, successes and failures, obstacles to overcome, and the effectiveness of policy interventions. The analyses presented here aim to contribute to addressing several theoretical and practical issues related to innovation.

Keywords: *Innovation; Production-business; Policy.*

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1. Introduction

The significant value that innovation brings to production and business activities is the fundamental basis for its existence. At the same time, innovation needs to be based on certain *premises*. This value represents the "necessity" for innovation, while the prerequisites for it represent the "possibility" of its implementation. However, the *two aspects of "necessary"* and *"possible"* are not enough to understand innovation.

The important meaning is the *end point* that innovation must reach. The necessary premise is the *starting point* of innovation. Between the two starting and ending points is the entire process of innovation. This process is inherently complex and affects innovation in many aspects. The innovation process is not just a long or short period of time, fast or slow, but importantly contains the transformations of the premise factors; the steps in the chain of forming results must achieve a state of unity between innovation and production and business (P&B), and efforts must be made to implement innovation through production-business.

The question is, how does the process from the *starting point* to the *end point* of innovation take place? This study is based on the approach of considering the innovation process as the transformation steps of new knowledge to create superior economic value. The transformation steps are further analyzed through the relationship between innovation and P&B, specifically innovation linked to P&B and innovation implemented by P&B. The contents of the innovation process are the basis for determining the State's intervention policy in the innovation process.

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2. Basic steps towards the final result of innovation

P&B activities have three main states: maintaining the status quo, scaling up, and changing operational methods. When maintaining the status quo, P&B activities are repeated without any changes in scale or method. Scaling up involves increasing the quantity of input factors in P&B activities. Changing operational methods means altering how input materials are used, how labour is utilized, how capital is deployed, how markets are approached, etc. Changing the operational method of P&B is not driven by input factors such as materials, labour, or capital, as is the case with maintaining the status quo or scaling up.

Economic value is generated from P&B activities. Economic value increases in a horizontal manner by expanding the scale of P&B through the increase of input factors. Economic value is increased in breadth by expanding the scale of production and business with an increase in the number of input factors. Economic value increases in depth by changing the methods of production and business (P&B). The path to increasing economic value in depth is through enhancing the productivity, quality, efficiency, and competitiveness of P&B activities. Improving productivity, quality, efficiency, and competitiveness is the goal of changing P&B methods and can only be achieved through such changes.

Changing the methods of P&B depends on new knowledge replacing the old knowledge that currently governs P&B activities. Innovation is essentially the transformation of P&B methods based on new knowledge. Here, innovation is conceived as the change in P&B methods driven by new knowledge (*Hoang Lan Chi, 2024*) - a perspective that differs from many commonly seen definitions of innovation[2]...

Based on differences in the issues to be addressed, the expected outcomes, the contents of transformation, and the implementing forces, the innovation process can be divided into the following basic steps: new knowledge closely aligned with P&B activities (forming new P&B solutions); new P&B solutions suited to specific P&B operations, pioneering forces driving the new P&B solutions; new business solutions replacing old P&B solutions (new solutions governing P&B activities), economic value generated by the new P&B solutions (see Table 1). It can also be said that, in this context, the issues raised, the goals to be achieved, the contents of transformation, and the implementing forces of innovation in general have been broken down into distinct components that are sequentially connected within the innovation process.

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[2] For example, there have been definitions such as: Innovation is the successful introduction of new methods or outcomes into a specific application context (*Molr, L. (1969*), *Determinants of innovation in organizations*, The American Political Science Review, 63(1), p. 112); Innovation is a process of transforming ideas into new, useful products, processes, and services that are applied in practice (*Bessant, J. & Tidd, J., 2007*, *Innovation and Entrepreneurship*, Wiley, Chichester, p. 29); Innovation is the implementation of a new or significantly improved product (goods/services), process, marketing method, or organizational method in business practices, workplace organization, or external relations (*OECD, 2005*, *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data*, p. 46)…

Table 1. Basic transformation steps of the innovation process

Steps	Issues Raised	Expected Outcomes	Contents of Transformation	Implementing Forces
(1) New knowledge aligned with production-business (P-B)	Difference between new knowledge and actual P-B requirements	Development of P-B solutions based on new knowledge	New knowledge → New P-B solutions (targeting new P-B methods)	Entities generating new knowledge (may collaborate with P-B actors)
(2) New P-B solutions tailored to specific P-B activities	- Gap between general new P-B solutions and those suited to specific conditions (industry, natural/social conditions) - Diversity of demands for changing P-B methods	Identification of new P-B solutions suited to specific conditions (by selecting and adjusting existing ones)	General new P-B solutions → Customized solutions for each unit	Functional components within P-B units (may coordinate with external actors)
(3) Pioneering forces promoting new P-B solutions	- Uneven and polarized attitudes toward new P-B solutions - Need for proactive and voluntary implementation	Formation of forces with interests, capabilities, and spirit aligned with new P-B solutions; these forces are actively promoting the adoption of new P-B	- Anticipated impact of new P-B solutions on the unit → Actual impact on different departments - General motivation → Individual motivation	A segment of the P-B workforce is involved in innovation
(4) Full implementation of new P-B solutions	- Expansion requires a struggle between supporters of new methods and defenders of old ones - New P-B solutions require systemic coordination; changes in P-B methods are linked to other related changes	New P-B solutions replace old methods (partially/pilot-tested before full implementation)	- Proposed new P-B solutions → New P-B methods dominate actual operations - Small group of supporters → Full organizational support new P-B solution	The entire P-B workforce is involved in innovation.
(5) Economic value generated by new P-B solutions	- Gap between expected and actual economic value generated by the new P-B solution	Accurate assessment of the actual economic value brought by new P-B solutions - Decision to	P-B activities based on new P-B solutions → Economic benefits achieved by new P-B solutions	Relevant functional departments within the P-B unit.

Steps	Issues Raised	Expected Outcomes	Contents of Transformation	Implementing Forces
	- Complex relationship between changes in P-B methods and expected economic benefits	continue or abandon the applied P-B solution		

Source: Author's own

The fundamental steps illustrate the key stages and milestones that innovation must go through. These steps are interrelated, serving as prerequisites and complements to one another. Each subsequent step can only be formed based on the previous one, and it also represents a continued development of the preceding step.

The fundamental steps also show more specifically and clearly the innovation process in some aspects:

- The length or shortness of the innovation process depends on the time to implement each fundamental step.
- The depth and thoroughness of innovation depend on the depth and thoroughness of each fundamental step.
- The success or failure of innovation depends on whether these fundamental steps are continued, sustained, or discontinued. Innovation failure can occur at different fundamental stages (see Figure 1)

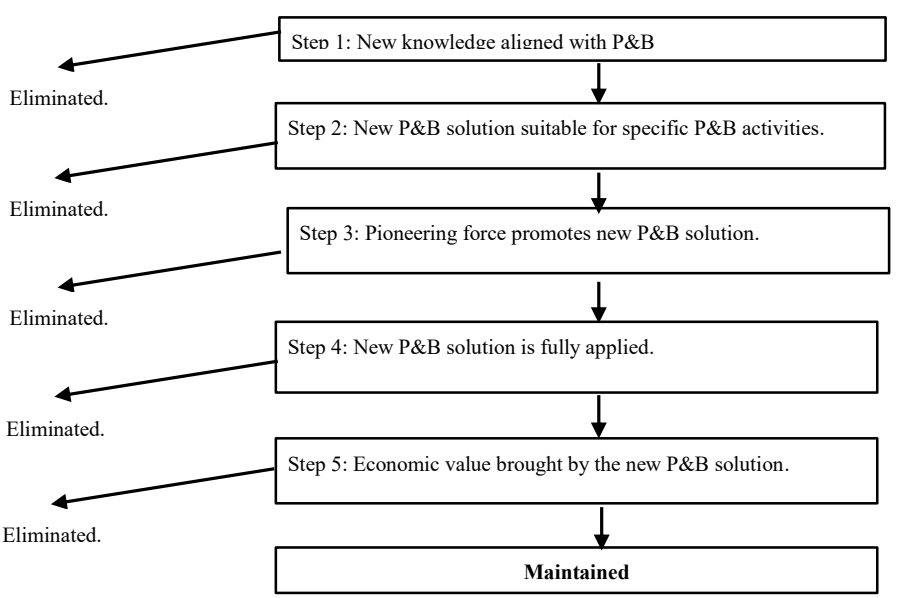

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Figure 1. Success and Failure Across the Fundamental Steps of Innovation

3. The process of innovation in comparison with the production and business processes

3.1. The relationship of separation, substitution, and unification

Putting it in relation to the P&B process will allow us to clarify the innovation process further. The relationship between the innovation process and the P&B process usually has three consecutive stages: separation, replacement, and integration.

In the first stage, innovation and P&B activities exist in two different directions. Innovation begins with new knowledge, while P&B activities rely on inputs such as natural resources, labour, and capital etc. This stage corresponds to Basic Step 1 outlined in Section I.

In the second stage, innovation and P&B activities begin to interact. New P&B methods introduced through innovation replace outdated ones, laying the foundation for new P&B activities to take over existing ones. This stage corresponds to Basic Steps 2, 3, and 4 in Section I.

The third stage marks the integration and unification of innovation-driven changes aimed at generating superior economic value with P&B activities that seek to capture that value. This stage corresponds to Basic Step 5 in Section I.

Through the relationship with P&B, innovation shows diversity and richness. Innovation is both separate and identical to P&B, both opposed and unified with P&B. These specific states depend on certain distinct stages. Innovation is separate from P&B in the first stage and becomes unified with them in the third stage. Innovation is opposed to P&B in the second stage and unified with P&B in the third stage.

3.2. Relationships as the basis for identification, target objects of intervention, and environment for P&B activities

Innovation impacts the way P&B operates, and on the other hand, is also significantly influenced by P&B:

- Innovation takes P&B as the basis. It is necessary to rely on the P&B needs of change to determine appropriate innovation. Without demand from P&B, innovation will lack an objective basis for its existence. There is demand from P&B, but one cannot grasp it accurately; innovation will not be close to practical requirements. Innovation takes P&B as the basis, as shown in the second stage;
- Innovation takes production and business as its target subject. The impacts of innovation are through P&B. In innovation, it is impossible to ignore the P&B factors and processes, and it is also impossible to replace these factors and processes with something else. Even the pioneering force driving innovation includes a part of the subject's individuals who are actively engaged in P&B. It is precisely these impacted actors who demand innovation to be relevant and appropriate to P&B needs. Innovation takes P&B activities as its target object of intervention, as reflected in the second stage;

- Innovation takes P&B activities as the condition and environment for its effectiveness. Enhancing value through changing P&B methods, innovation is always embedded within the P&B value creation process. This is reflected in the third stage.

The existing P&B activities are not merely outdated methods that need to be changed but also are the result of development across many historical periods - a crystallization of common shared values in previous P&B activities. Accordingly, P&B contains common frameworks and foundational elements that serve as positioning points for reference for innovation-driven changes in P&B methods.

3.3. Relationships of change and stability, interruption and continuity

Another noteworthy relationship between innovation and P&B lies in the interplay between change and stability, interruption and continuity. When innovation is embedded within P&B activities, it generates change within stability and disruption within continuity. This relationship helps further clarify the innovation process in the following aspects:

- Innovation and P&B together create a development process that is both changing and stable, both interrupted and continuous. Innovation that is separated from P&B will only be a simple change and disruption, leading to confusion and deviation from the innovation goal of serving practical needs. On the contrary, without innovation, P&B will only be repetitive stability - a monotonous continuity lacking growth or development. The combination of change and stability, disruption and continuity, will form a sustainable development process;
- Innovation represents changes and disruptions embedded within the stable and continuous flow of P&B. The degree, content, and nature of these changes and disruptions must meet the requirements for stability and continuity in P&B. It is evident that achieving harmony between change and stability, disruption and continuity is not easy, but it still remains within the reach of innovation;
- From the direction of P&B toward innovation, the transition moves from stability to change, and from continuity to disruption. Conversely, from innovation back to P&B, the transition shifts from change to stability, and from disruption to continuity. These are critically important connection points that determine the success of integrating innovation with P&B. Here, innovation closely aligns with P&B through specific aspects such as: **a**pproaching the ongoing production-business processes; enabling to transformation of the dominant production methods by newly introducing P&B approaches; seamlessly integrating into P&B to ensure stability and continuity;
- In terms of intensity, the process of change and disruption can be divided into three segments. The first segment shows a gradual increase in change and disruption. The second segment reaches a peak level of change and disruption. The third segment tends to reflect a gradual decrease in change and disruption (See Figure 2).

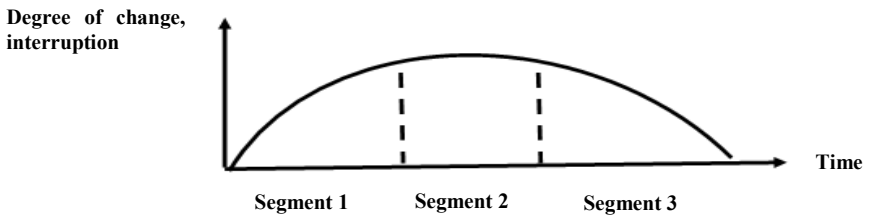

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Figure 2. Segments in the process of change and discontinuity created by innovation

The relationship between change and stability, discontinuity and continuity, creates conditions for innovation to take place flexibly. Innovation can be carried out in different aspects, scopes, and separate P&B processes. Changes and discontinuity can exist in many scopes and locations… but are consistent and aligned with the P&B process.

The innovation process is clearly reflected through its relationship with P&B activities. The time, quality, and outcomes of innovation are accumulated through specific transitional states such as: separation → replacement → integration; stability and continuity → change and disruption → stability and continuity; increasing degree of change and disruption → peak level of change and disruption → decreasing degree of change and disruption. Failures in innovation may also occur at various stages within these transitional states. (See Figure 3)

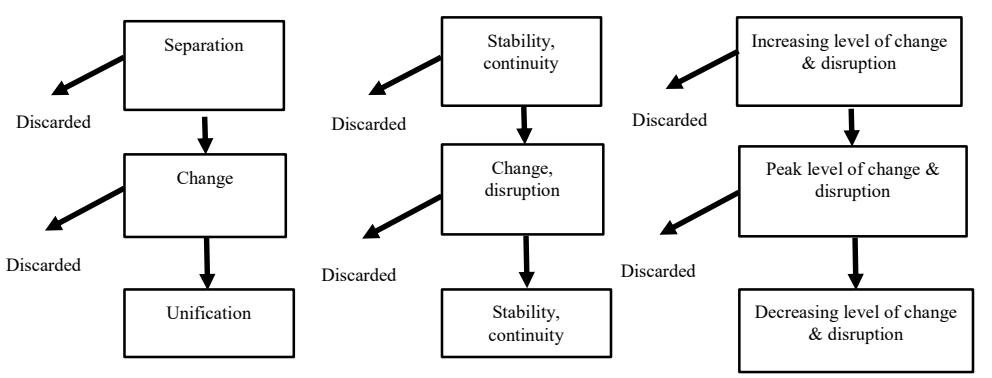

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Figure 3. Success and failure across different stages in the transition states of innovation

4. Innovation is carried out by P&B

4.1. Basic obstacles to innovation

P&B activities encompass both the creation of operational methods and their application in conducting P&B-related tasks. Innovation refers to the transformation of these operational methods within the P&B system itself. Innovation is not carried

out by an external system separate from P&B, nor is it a combination of another system with P&B. Rather, it is driven and executed by the P&B system itself.

P&B activities are often based on existing methods as their premise and foundation. Implementing innovation means requiring P&B to replace the current premise and foundation with a new one. Replacing the existing P&B method faces several obstacles, such as: (1)P&B must eliminate the premise, and foundation that are currently governing or dominating themselves; (2) It must give up the efforts and costs invested in establishing the old P&B method; (3) It must give up the benefits that have been proven in practice, while the benefits brought by innovation contain many risks; (4) It must forgo the benefits associated with a stable and continuous P&B state, and instead accept a state of change and disruption when carrying out innovation; (5) It must give up the gains derived from previously invested items (equipment, infrastructure, human resources, etc.) and requiring significant additional investment costs for innovation; (6) It must eliminate components of capital that are only compatible with the old P&B method (in terms of benefits, qualifications, etc.).

These are very significant and influential obstacles. For example, take obstacle (1). In history, there have been negative comments about some innovations that later brought about changes to the whole world, for example: the British Parliamentary Committee's comment when referring to Edison's invention of the electric light bulb was "...good enough for our friends on the other side of the ocean... but not enough to attract the attention of scientists or practical people" (in 1878); or Thomas Edison himself affirmed about alternating current: "Using alternating current is a waste of time. No one will use this invention" (in 1889); or TIME magazine commented on online shopping as "The idea of remote shopping will fail miserably because women like to go out of the house, like to hold and look at goods, and it is difficult to change their way of thinking" (1966); or Lee DeForest commented on television as "While this invention is theoretically and technically feasible, it is commercially impossible. This is a time-consuming initiative" (1926); [3]...

These comments are not simply personal limitations but are due to the dominant influence of existing old P&B methods. Researchers have raised the question: Why do businesses encounter so many difficulties in realizing the potential of innovations? The answer is often attributed to subjective factors of the P&B unit... However, an important reason is the obstacle of old P&B methods to innovation.

It is the old P&B methods themselves that establish the principles for maintaining the operations of the P&B unit - like Allan Afuah's concept of the 'dominant managerial logic' (Allan Afuah, 2012, pp. 202-205) - and go beyond mere inertia-based obstacles[4]…

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[3] "8 Great Inventions That Were Once Dismissed" https://khoahoc.tv/8-phat-minh-vi-dai-tung-bi-coi-thuong-24235#google_vignette

[4] There have been observations emphasizing the obstacles to innovation stemming from habits and inertia, such as: But such a change always encounters the resistance of the law of inertia. For humans, this manifests as individual psychological inertia, followed by the cultural inertia of society. The resistance from these laws of inertia is immense. Therefore, for the innovation process to be carried out, there is no other way but to first renew the organization itself, through changes in its structure and operating mechanisms. Structural change can involve eliminating inefficient departments that focus more on control than on promotion; or

These six types of obstacles are associated with different issues: positional concerns - with obstacle (1); economic interests - with obstacles (2) through (5); and power dynamics - with obstacle (6). The old P&B methods have been affirmed through position, economic benefits, and the implementing forces. The sustainability of the old P&B methods is reflected in the fact that carrying out P&B activities is also the process of recreating the position, benefits, and implementing forces associated with the old P&B practice. Furthermore, these issues manifest in multiple dimensions: they are specifically tangible (in terms of economic interests), deeply embedded (in relation to positional structures), and action-oriented (linked to the implementing forces). The interdependent relationships among these elements also contribute to the enduring nature of the legacy P&B model.

Studies often focus on examining the obstacles to innovation from the perspective of the new P&B practices that will be adopted. For example, there are potential risks associated with uncertainty (regarding the future and the benefits of technology), limited information about the advantages, costs, and even feasibility of the technology, and uncertainty about demand for new products or the effectiveness of new technologies[5]…

Here, the emphasis is on the obstacles from old P&B methods (including viewing obstacles from new P&B methods from the perspective of old P&B methods), and it is considered that this is really the most significant obstacle to innovation.

4.2. Solving obstacles to innovation through production and business

The obstacles and challenges posed by legacy P&B methods can be addressed both within and through P&B activities themselves. The position of the old P&B model may be altered by the feedback effects of ongoing P&B operations. P&B activities generate new requirements that necessitate adjustments to existing P&B practices. They also provide evaluative feedback on the rationality and relevance of the current P&B methods. At the same time, it is possible to promote the replacement of legacy P&B practices through initiatives that operate independently of those old P&B practices - such as innovation implementing plans, programs, and projects,…

P&B activities clearly demonstrate the benefits generated by old P&B practices, while also assessing whether those past benefits can be sustained under a new context (regarding obstacle 3). P&B further enables the projection and evaluation of potential benefits and associated costs of adopting new P&B methods (in relation to obstacles (3), (4), and (5)). Moreover, through the practical application of new P&B approaches, the actual outcomes become evident in comparison to expectations.

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establishing a separate experimental space for new ideas. As for changing mechanisms, the focus should be on removing bureaucratic barriers, administrative procedures that are detached from reality; or creating a new mechanism that allows new experiments to be conducted as a normative activity." - *"Barriers to Innovation," Tia Sang Magazine, Issue 11/2014*

[5] For example, the following assessment states: "Innovation is a process inherently fraught with risk. The adoption of technology is often characterized by significant uncertainty - regarding both the future and the benefits of the technology. Another defining feature is the limited availability of information concerning the benefits, costs, and even the feasibility of the technology. Uncertainty about demand for new products or the effectiveness of new technologies may result in low initial adoption rates among enterprises. Evidence of firms increasing investment in quality upgrades to meet new export demands serves as the basis for this argument."

(Source: National Agency for Science and Technology Information, *Innovation in Selected Developing Countries in Southeast Asia*, Strategic Development Bulletin, No. 9/2022).

This serves as a basis for answering the critical question: Should the benefits of old P&B practices be maintained, or should they be replaced by greater benefits generated through new P&B methods?

Opposing the forces that defend old P&B practices are those forces advocating for new P&B approaches. When P&B activities based on old methods reveal their limitations, it is also the time when elements against the old methods appear. Individuals whose interests, knowledge, and mindset, etc., align with the new P&B methods often arise from within the very framework of old P&B practices.

The struggle between the forces protecting the old P&B methods and the forces supporting the new P&B methods takes place right in the P&B process. The success of each side is also reflected in the P&B results. P&B also contains the potential solutions to transform a part of the old P&B methods' protectors into people with a positive attitude towards the new P&B methods, or to screen out those who are not suitable for the new P&B methods.

4.3. Conditions that promote the resolution of obstacles to innovation.

The obstacles and problems of the old P&B methods are overcome under certain conditions from outside and inside the P&B unit.

External conditions-such as shifts in demand, raw materials, the environment, and competitive relationships-exert pressure on P&B activities, and through them, put pressure on the constraints imposed by the positional dominance of old P&B practices. These changes and competitive dynamics directly and swiftly impact the benefits derived from old P&B methods. Such benefits may not only decline relatively compared to external competitors but also decrease absolutely in comparison to the enterprise's own previous performance.

These external shifts and competitive pressures simultaneously confront the forces defending old P&B practices with external challengers, while also supporting and reinforcing the forces advocating for new P&B approaches. For transformation to occur, these changes and competitive dynamics must generate enough pressure that is both sufficiently strong and clearly defined to overcome the obstacles rooted in old P&B practices.

Internal conditions refer to the ability to take advantage of the impacts of external changes and competitive dynamics to overcome the obstacles and limitations of old P&B practices. These abilities encompass awareness, vision, resources, determination, forecasting, planning, and other competencies related to both the old and new P&B methods. However, internal abilities are often relatively constrained, as they are closely tied to the existing P&B framework rooted in outdated practices.

4.4. Comparing the advantages of implementing innovation between different types of P&B units

Comparing the advantages of implementing innovation between large and small enterprises, enterprises with seniority in the industry and new to the industry ones have been paid attention to and mentioned in many studies, such as those of Joseph

Alois Schumpeter, William J. Abernathy, Lois Clark, Patrick David Henderson[6],... From the perspective of obstacles from old P&B methods, there can also be another perspective on this issue.

Here, the advantages of P&B units include the degree of obstacles encountered and the ability to overcome them. In terms of the degree of obstacles, small enterprises and new to the industry enterprises have an advantage over large enterprises and enterprises with seniority in the industry. In innovation, large enterprises and enterprises with seniority in the industry often face great obstacles in all 6 obstacles posed by P&B methods. On the other hand, in terms of the ability to overcome obstacles, large enterprises and enterprises with seniority in the industry have an advantage. The internal capabilities of large enterprises and enterprises with long experience in the industry are somewhat more prominent than those of small enterprises and new to the industry enterprises.

The advantages of different types of P&B units will be further specified when associated with different characteristics of innovation, such as whether the change is radical or incremental, the scope of change is wide or narrow, sustainable or unsustainable, continuous or intermittent, etc. Obstacles from old P&B methods that are inherently different according to the characteristics of innovation will bring different advantages to each type of P&B unit.

Each type of P&B unit has its own advantages in implementing innovation. Innovation opens opportunities for all types of P&B units, and each type can realize the opportunity by promoting its own advantages.

4.5. Appropriate and inappropriate innovation

Implementing innovation-implying a transformation of the prevailing P&B modes-is essentially a process of P&B self-conquest. Innovation also entails leveraging external pressures to drive fundamental internal change within P&B operations.

Innovation is often evaluated by quantity (including scale and frequency). However, the first important thing is the degree of adherence to P&B problems, adherence to the obstacles of old P&B methods, adherence to external changes and competitive relations, and adherence to the internal capacity of the P&B unit.

These degrees of adherence help distinguish the appropriate innovation that brings success from inappropriate innovation that leads to failure (Figure 4).

[6] Refer to: Schumpeter, J.A. (1934), "The Theory of Economic Development: An Inquiry into Profits, Capital, Credits, Interest, and the Business Cycle", Transaction Publishers, Piscataway; Abernathy, W., Clark, K.B. (1985): Mapping the winds of creative destruction, *Research Policy*,14(1), 3-22; Henderson, R., Clark, K.B. (1990): Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms, Administrative Science Quarterly, 35(1), 9-30;…

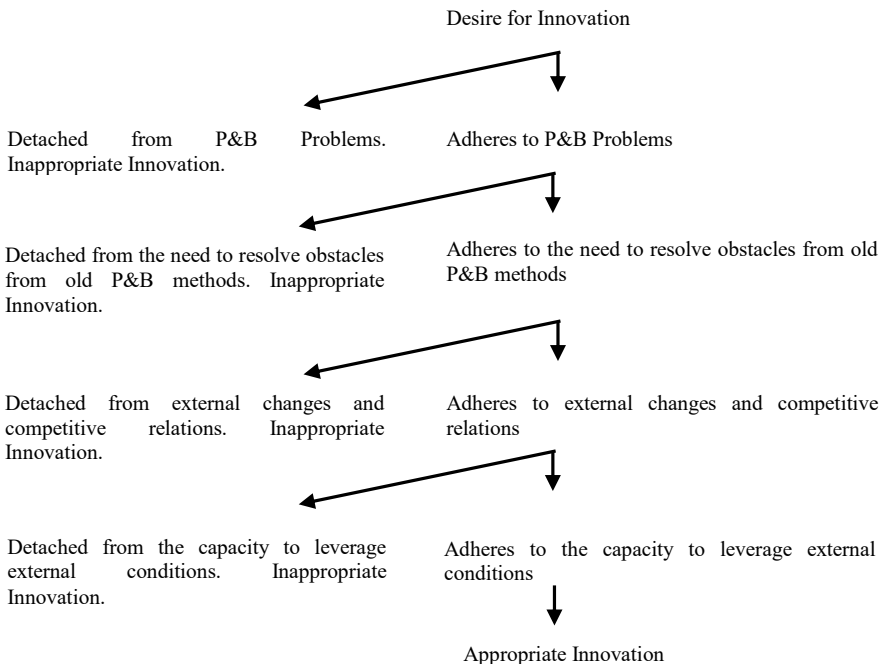

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Figure 4. Appropriate innovation leads to success, and inappropriate innovation leads to failure

5. State intervention policy in the innovation process

The multi-dimensional analyses of the innovation process in the previous sections not only help clarify the characteristics of innovation but also play a crucial role in shaping the State's intervention policies. Fundamentally, they suggest ways to enhance policy effectiveness through a combination of expanding and focusing the scope of intervention, increasing flexibility in intervention approaches, and emphasizing the autonomy of the targeted entities

5.1. Combining expanding and concentrating the scope of intervention

Policy can influence various aspects of the path toward successful innovation, including the relationship between innovation and P&B activities (where innovation takes P&B as the basis, the subject, and the environment; whether it is separate, substitutive, or integrated; whether it brings change or stability; whether it occurs intermittently or continuously), the obstacles posed by outdated P&B practices to innovation, external and internal conditions affecting innovation, and the outcomes of success or failure. Each of these dimensions contains its own driving forces that contribute to promoting innovation. Strengthening policy impact across these different aspects essentially means expanding the policy space and taking advantage of opportunities for policy intervention in the innovation process.

Alongside and in conjunction with expanding the scope of policy impact on various aspects of the innovation process is the ability to increase the degree of focus on specific strategic priorities. These focal points can be selected and identified based on the specific breakdown of the innovation process. Policy intervention process may concentrate on one of the five steps toward successful innovation, on one of the many relational states between innovation and P&B activities, or on one of the six types of obstacles stemming from outdated P&B practices, or on one of the many forms of innovation failure. This focus is situated within an overarching relational framework. The combination of expansion and intensified focus of policy intervention for innovation serves as a solution to overcome the contradiction between broad, dispersed expansion and narrow, fragmented concentration[7].

5.2. Increasing flexibility

It is impossible to design a policy that both focuses on specific strategic priorities and simultaneously serves as a universal framework applicable to all cases. General questions may be asked, such as: Which step in the innovation process should be the focus of intervention? Which of the six types of obstacles from outdated production-business practices should be prioritized? … but there will certainly be no one-size-fits-all answer for all cases. Innovation policy interventions that impact innovation are flexible in many aspects:

- The scope of policy focus is concretely defined depending on different contexts and policy initiatives. This very flexibility helps explain more clearly the diversity of innovation support policies observed across countries[8];
- There may be a process of implementation → evaluation → adjustment. A focused approach on specific points facilitates the evaluation and refinement of policies;
- Policies evolve alongside the development of understanding about innovation. The in-depth analyses of the innovation process in the previous sections have also revealed many issues that require further study;
- Flexibility is reflected not only in the overall policy framework but also in the content of individual policy documents, which include situational provisions and open-ended regulations.

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[7] *One can see that this also relates to observations such as:* 'In the context where most countries in the region still lag behind in innovation performance, policies should focus on building the fundamental capabilities of enterprises and prioritize support for technology adoption and diffusion. However, according to in-depth assessments of the innovation policy frameworks in Indonesia, the Philippines, and Vietnam, current policies have not effectively yet supported the achievement of these goals. Innovation policies in these countries are not properly aligned to address the most pressing challenges, with varying degrees of misalignment.' (National Agency for Science and Technology Information: *Innovation in Selected Developing Countries in Southeast Asia*, Development Strategy Bulletin, No. 9/2022).

[8] Surveys and studies have identified varying trends in innovation policy across countries. For example, differences exist between policies that focus on specific types of enterprises (such as technology-based firms or small and medium-sized enterprises) and those that target businesses more broadly; between financial and non-financial instruments; between competitive and non-competitive tools; and between supply-side and demand-side approaches (*OECD, 2014, Science, Technology, and Industry Outlook Policy Database*, 2014 edition). However, these comparisons remain general and superficial. A more detailed and insightful understanding of actual phenomena can be achieved by examining the core focus areas of the innovation process.

Specific contents on steps towards success, the relationship between the innovation process and the P&B process, obstacles from old P&B methods, etc., are "necessary" and "possible" conditions to ensure the flexibility of innovation policies. Innovation policies are flexible not only because it is difficult to find common ground, but also because there are too many opportunities to choose the intervention solutions, and it is necessary to determine the most suitable innovation solution for each specific context.

5.3. Promoting the autonomy of P&B units

Innovation is closely linked to P&B and is carried out by P&B units. Innovation implementation is consistent with the inherent functions of P&B units. Therefore, any external intervention in innovation must pay due attention to the autonomy of P&B units. Respecting the autonomy of P&B units in innovation policies is shown in:

- Production and business units proactively propose requests for support from policies. Emphasizing support according to the requests of P&B units is also consistent with the characteristics of policies focusing on specific and flexible key points, as mentioned above. Along with autonomy in proposing requests is the self-responsibility in using support resources and in the results achieved from supported resources;
- P&B units are allowed to flexibly use resources supported by innovation policies to a certain extent. This flexibility is based on the specific issue being focused on and its relationship with many other issues, and the self-adjustment ability of the P&B unit;
- Increase competitiveness among P&B units in accessing support from innovation policies;
- Focus on supporting to improvement of the P&B unit's capacity to take advantage of the impacts of external changes and competitive relations to overcome obstacles and problems with old P&B methods;
- Strengthen the form of public-private partnership in technological innovation projects;
- Enhance the responsibility of P&B units in participating in the development and evaluation of innovation policies;
- Develop and apply criteria to assess the P&B unit's level of readiness in implementing innovation and readiness in receiving external support resources as a basis for selecting policy beneficiaries;
- Close coordination between innovation support policies and P&B support policies.

In addition to thoroughly exploiting the autonomy of P&B units, innovation policies also need to pay attention to areas beyond the capacity of P&B units, such as:

- Create a competitive environment to promote P&B units to conduct innovation;
- Create new knowledge through State science and technology programs and projects;
- Solve unemployment problems and create jobs for the labour force eliminated due to innovation;
- Prioritize support for innovations with common significance, such as innovation in key areas, innovation serving sustainable development, inclusive innovation, etc;
- Support the linkage between P&B units and research institutes, universities, etc., in coordinating to conduct innovation;
- Support organizations providing capital, information, services, infrastructure, etc. for P&B units to conduct innovation.

Thus, the main goal of the policy is to exploit and promote the innovation potential of P&B units. There are types of potential that need to be exploited and promoted, such as: conducting innovation according to internal demands, conducting innovation according to the changes in external conditions, conducting innovation towards serving the common values of the economy and society, etc.

5.4. The effectiveness of innovation support policies

Policy interventions that closely follow in-depth analyses of the innovation process have the potential to yield high effectiveness. Such effectiveness stems from: broadening the scope of consideration to avoid missing potential opportunities; narrowing the focus to key priorities while excluding unnecessary targets; overcoming rigid and unrealistic policy frameworks; leveraging the autonomy of P&B units and strengthening the connection between policy makers and policy recipients. It also involves enhancing coherence (minimizing overlap, duplication, and fragmentation) between innovation support policies and P&B support policies, as well as clearly distinguishing innovation support policies from those supporting science and technology. Policy evaluation and adjustment will be more convenient when policies address specific contents and impactful aspects of P&B activities, and are subject to proactive and constructive supervision from P&B units.

Effectiveness is also ensured when an in-depth analysis of the innovation process is the basis for consistency between the goals, objectives, and tools of the innovation support policy. These effects bring benefits to both the State and P&B units.

6. Conclusion

This study has identified the fundamental aspects of the innovation process, which are the transformation of input factors in the form of new knowledge into economic value, the connection between innovation and P&B activities, the innovation carried out by P&B, and the intervention of government policy in the innovation process. At the same time, it also sheds light on key elements such as the steps, status,

obstacles to be overcome, and the possibilities and methods of state intervention in the innovation process. These analyses are conducted from a new perspective, aiming to address both theoretical and practical issues currently facing innovation- such as distinguishing innovation from science & technology and P&B activities; the process of converting new knowledge into economic value; obstacles to innovation; innovation failures and solutions to overcome that; and appropriate policy interventions for innovation./.

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