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Building the Innovative Startup Ecosystem in the Digital Era: International Experiences and Applications in Vietnam

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Abstract:
Building an innovative startup ecosystem and facilitating its sustainable development have garnered significant attention from governments and academia in recent years, especially in the context of the 4.0 Industrial Revolution, which is creating new opportunities and challenges for all nations. An innovative startup ecosystem is particularly important for Vietnam, given that the number and scale of enterprises are lower than those in some other countries in the region and the world. This paper discusses the experiences of various countries in building an innovative startup ecosystem, the current state of the startup ecosystem in Vietnam, and proposes several solutions to develop an innovative startup ecosystem in Vietnam.
Keywords: *Innovative startup ecosystem, innovative startups, experiences, current situation, Vietnam.*

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I. INTRODUCTION

In the trend of global scientific and technological development, innovative startup activities play a crucial role in promoting economic growth, enhancing competitiveness, and ensuring the sustainable development of each nation. Innovative startup activities need to be incubated, nurtured, and developed within a favorable ecosystem. Vietnam is a developing country, and therefore, studying and learning from experiences in building startup ecosystems, encouraging the emergence and growth of startups in general, and innovative small and medium enterprises in particular, is essential. This has a significant impact on the formation and development of the startup sector specifically, as well as the overall economic development.

II. CURRENT SITUATION OF VIETNAM'S STARTUP ECOSYSTEM

Vietnam is considered one of the dynamic economies and is seen as a hub for the development of innovative startup enterprises in the Asia-Pacific region. According to the 2021 annual reports from DO Ventures and Cento Ventures, Vietnam has risen from 5th to 3rd place among the six largest countries in the Association of Southeast Asian Nations (ASEAN) for its startup ecosystem, following Indonesia and Singapore. Evidence shows that in 2018, venture capital investment in Vietnamese startups accounted for approximately 5%, which increased to 17% by 2019. The number of foreign investors and investment funds operating in Vietnam has also increased by 50%, with a majority coming from South Korea and Singapore.

With a youthful population structure and a stable economic growth index, amidst the backdrop of the Fourth Industrial Revolution, the Party and Government have strongly supported and carefully guided conditions favorable for the development of an innovative startup ecosystem. This solid foundation is pivotal for the gradual formation and development of Vietnam's innovative startup ecosystem, leaving noteworthy imprints. Numerous legislative and policy documents have been enacted recently, notably Decision 844/QD-TTg approving the "Support Program for the National Innovative Startup Ecosystem by 2025," which has initiated specific activities, tasks, and solutions, establishing an environment for the sustainable development of ecosystem components.

Various programs and initiatives have been researched and implemented, contributing to the groundwork for the development of Vietnam's startup ecosystem. Examples include the Technology Commercialization Project modeled after Silicon Valley by the Ministry of Science and Technology, and the Vietnam-Finland Innovation Partnership Program (IPP2).

Vietnam's startup ecosystem is witnessing the establishment of numerous associations and specialized institutions. Universities are increasingly fostering entrepreneurship and innovation, with the emergence of multiple innovation centers and training programs. Vietnam's advisory network has also expanded, indicating substantial growth in both depth and breadth of the startup ecosystem.

The most notable development in Vietnam's startup and innovation ecosystem over the past year has

been the deep integration of innovative models into various sectors such as healthcare services, education training, and business operations. Additionally, sectors like payment systems, finance, and logistics have seen enhanced applications.

In 2021, despite the complex developments of the pandemic, financial investment in innovative startups in Vietnam reached an unprecedented high of over USD 1.5 billion. Currently, Vietnam boasts more than 1,000 organizations capable of supporting startups, including over 140 universities and colleges hosting entrepreneurship activities, along with active participation from large enterprises and corporations.

In 2022, associated with the Techfest event—an annual government initiative for the startup community—Vietnam established 34 technology villages, marking a 19-village increase from 2021. These predominantly focus on Blockchain, Artificial Intelligence (AI), circular economy innovations, and breakthrough models addressing environmental issues, sustainable development, and the active engagement of corporations and major tech firms in green technology applications.

A report by the World Intellectual Property Organization (WIPO) recognized Vietnam among the countries achieving significant advancements in the startup ecosystem over the past decade. The Global Innovation Index (GII) 2022 report by WIPO also positioned Vietnam at 48th out of 132 countries globally, and 3rd in Southeast Asia, following Singapore (7th) and Thailand (43rd).

Presently, Vietnam hosts over 1,400 organizations capable of supporting startups, including 196 coworking spaces, 69 business incubators, and 28 business promotion organizations. There are 108 venture capital funds targeting or operating in Vietnam, including 23 with Vietnamese legal entities and 23 purely Vietnamese funds. These figures have consistently risen in recent years, demonstrating active community engagement in developing the startup ecosystem.

However, despite achieving significant progress, Vietnam's startup ecosystem still faces several challenges:

- Existing mechanisms, policies, and current programs largely focus on the primary element of the ecosystem, "startup enterprises," with separate initiatives lacking an integrated design to create conditions and opportunities for sustainable development. Moreover, many of these are short-term projects lasting 2-5 years, unable to address long-term issues in supporting Vietnam's startup ecosystem development, such as the establishment, implementation, and evaluation of legal regulations and policy mechanisms for startup activities.
- Digital transformation has brought benefits to startup operations, but the deployment of applications remains slow, mainly concentrated in certain localities and major cities. Additionally, there's a lack of close coordination among the constituent parts of the startup ecosystem, such as communication, policy reception, the establishment and management of investment support funds and venture capital; between universities, research institutes, startup incubators to formulate comprehensive and feasible solutions for startup operations.
- Support policies for the startup ecosystem mainly focus on supporting startup enterprises in various fields, leading to a situation where startup activities, startup establishment is happening everywhere, in many fields, but lacking comprehensive access, clear objectives, and suitable solutions and roadmap to create "opportunities" for the startup ecosystem to originate and develop;
- Entrepreneurs and creative communities with the capacity to absorb startups have not yet been effectively consolidated into large-scale national research programs to collectively address common issues of the country and region.
- Essential needs of startup enterprises, such as intellectual property protection and market access, have not been adequately addressed.

III. INTERNATIONAL RESEARCH ON BUILDING ENTREPRENEURIAL ECOSYSTEMS

Research on the historical formation and development of entrepreneurial ecosystems across three groups of countries worldwide: (i) Developed countries group (USA, Israel, Finland); (ii) Regional countries group (Singapore, Malaysia, Thailand); and (iii) Emerging economies group (India, China). Based on the characteristics of ecosystem components, policies for developing entrepreneurial ecosystems are typically categorized into four main target groups (Mason and Brown, 2014): (1) Entities undertaking entrepreneurship within the ecosystem; (2) Providers of entrepreneurial resources within the ecosystem; (3) Connectors in the entrepreneurial ecosystem; (4) Entrepreneurial orientation within the ecosystem. According to these target groups, specific policies supporting the development of entrepreneurial ecosystems are applied as follows:

Firstly, for entities undertaking entrepreneurship within the ecosystem: Almost every country implements a series of policies to promote the formation and development of new business ventures. The support mainly involves providing information and advice to new entrepreneurs. These policies are characterized by not differentiating between different types of target entrepreneurship. Key approaches include: (i) Support for entrepreneurs in the pre-start-up and early stages through intensive support and consultation; (ii) Support for

startup businesses through business incubation, providing business premises, consultancy, networking opportunities, and financial resources (Miller and Bound, 2011). Business promotion organizations led by the private sector have also been established to nurture fledgling ventures (examples include Blueseed, Y Combinator, 500 Start-Up in Silicon Valley; Techstars in Boston, and DreamIt Ventures in Israel). Therefore, encouraging private sector involvement is crucial for the successful formation and development of an entrepreneurial ecosystem.

Secondly, for providers of entrepreneurial resources: Organizers within the ecosystem are the primary suppliers of basic resources for startup businesses. These organizers include financial providers such as banks, angel investor groups, venture capital firms, and service providers. The direct and indirect roles of the public sector in creating new capital, including the establishment of regional venture capital funds with contributions from both public and private sectors managed under private sector management; promoting "angel" investment activities. Although venture capital and angel investment are critical to entrepreneurial ecosystems, very few startups actually use these financial forms. Therefore, policies are needed to encourage funding forms and cooperation such as connecting growth-oriented startups with conventional funding sources like bank loans or newer financial forms like crowdfunding, peer-to-peer lending, invoice financing, or creating opportunities to access stock markets. Additionally, closer collaboration between policy makers and large companies will contribute to the development and promotion of startup incubation in the ecosystem.

Thirdly, for connectors in the entrepreneurial ecosystem (professional associations, startup clubs, entrepreneurial communities, business centers, investor-service liaisons, business brokers): The most important policies for this group involve connecting other entrepreneurial entities through the formation of practical communities or startup networks. These could be professional network organizations, entrepreneur clubs, venture capital support groups, or professional associations operating various membership rules, regulations, and criteria. An exemplary networking organization is Connect (based in San Diego, USA), one of the world's most successful organizations in linking innovators and entrepreneurs with the necessary resources to commercialize innovative products. In Asia, D Camp by the Banks Foundation for Young Entrepreneurs in Seoul, South Korea, is a notable example.

Fourthly, for entrepreneurial orientation in ecosystems: Practices from many countries show that for success, entrepreneurial orientation in the entrepreneurial ecosystem must ensure: (i) A "culture" accepting risk and failure, ready to strive for the successful entrepreneurship of individuals and businesses as exemplary models to encourage and promote other businesses; (ii) Education programs not only promote entrepreneurial behavior but also equip business owners with the necessary skills to operate sustainable development companies and growth-oriented directions; (iii) Policies to attract overseas diaspora communities to invest back home and migrate businesses also play a crucial role; (iv) A readiness to accept new, innovative ideas and embrace change; (v) Social norms and positive attitudes towards entrepreneurial spirit.

According to Isenberg (2010), although governments have the right to directly intervene in building and developing entrepreneurial ecosystems, many opinions suggest that governments do not necessarily have to do it themselves. Direct efforts to support and promote the development of entrepreneurial ecosystems should be entrusted to a new organization—a venture-building entity—with the capacity and motivation to strengthen the ecosystem. This organization needs the following basic characteristics: (i) Authorized to perform public tasks; (ii) Prospective; (iii) Training capabilities; (iv) Basic resources as required. This organization must be independent, not owned by any part of the community; Capable of conducting experiments, learning, redirecting, scaling up, and derivative activities.

Finally, to build and develop an effective system of entrepreneurial ecosystems, there must be a system of criteria for measuring effectiveness, which forms the basis for assessing appropriate policy adjustments. While constructing a system of indices is not simple, having a system of metrics for entrepreneurial ecosystems is indispensable. According to Vogel (2013), the system of indices measuring entrepreneurial ecosystems divides into three levels: Individual (including cultural indices, personal asset indices, job and life satisfaction indices), organizational (organizational performance results), and community (policy indices, market, local indices, job creation indices, infrastructure, transparency indices, support, connection, talent, capital funding, education, innovation indices, and new venture project indices). In addition, some organizations have also introduced their own sets of indicators to measure entrepreneurial ecosystems, such as the Massachusetts Institute of Technology's regional entrepreneurship promotion program.

IV. RECOMMENDATIONS FOR DEVELOPING A INNOVATIVE ENTREPRENEURIAL ECOSYSTEMS IN VIETNAM

By analyzing and evaluating the current development status of Vietnam's entrepreneurship ecosystem and based on international research experiences, this article presents several recommendations to develop the innovative entrepreneurship ecosystem in Vietnam as follows:

1. ***Continuing Legal and Administrative Reform***: The government plays a crucial role in resolving legal

obstacles, reducing administrative barriers such as taxes, licensing, and compliance to eliminate unnecessary hindrances for startup enterprises.

2. ***Focusing on Building Supportive Policies for Creative Startup Networks***: Improve support policies and promote educational institutions and training to cultivate young entrepreneurs with new, innovative mindsets, ethical professionalism, and equip them with comprehensive knowledge and modern business management skills to enhance the quality of creative startup projects. In addition, establish supportive policies for creative startup networks to connect startup enterprises with universities, research institutes, consulting experts, startup incubators, state and community support funds, and venture capital funds.
3. ***Addressing Regional Specificities and Development Stages***: Avoid simply replicating any specific entrepreneurship ecosystem from around the world in Vietnam. Develop mechanisms and policies to encourage entrepreneurship in sectors and fields with potential and developmental advantages such as agriculture, tourism, healthcare, and information technology. Establish mechanisms to facilitate participation of startup enterprises in global value chains. Encourage, attract, and incentivize domestic corporations and leading centers in investment development to promote the development of an innovative entrepreneurship ecosystem not only domestically but also regionally.
4. ***Enhancing International Cooperation***: Strengthen partnerships with international networks of experts, advisors, venture capitalists, and both domestic and international startup investment funds to attract and mobilize resources to support the development of the innovative entrepreneurship ecosystem. Additionally, intensify startup exchange programs, attract startup innovation investment funds, establish brands, and connect entrepreneurship ecosystems.
5. ***Increasing Training and Capacity Building***: Provide training and enhance capabilities for the startup and innovation workforce. Organize activities and directly support services for enterprises with startup and innovation projects. Connect components within the entrepreneurship and innovation ecosystem. Manage, operate, and utilize local infrastructure to support entrepreneurship and innovation activities.
6. ***Attracting Private Sector Engagement from the Start of Ecosystem Development***: Allow the private sector to lead startup ecosystems, with the government playing a facilitating role in their formation and development. Prioritize enterprises with high potential. Successful enterprises should be promoted and serve as exemplary cases for other startups.

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