

BUILDING UP THE ECO-SYSTEM OF INNOVATIVE ENTREPRENEURSHIP: THEORETICAL AND PRACTICAL STANDS OF VIEW

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Abstract:

The building of the innovative startup ecosystem and the offering of favorable conditions for its sustainable development have become the topics of deep concerns by the Government and the academic community during recent years. The topics get particularly attractive in the context of Industrial Revolution 4.0 (IR 4.0) which offers new opportunities and challenges to all nations. The systematization of basic notions and concepts would help researchers and policy makers have a clearer view on the necessity to build the innovative startup ecosystem. After providing the basic notions and a brief interpretation of the specific features of the innovative startup ecosystem, the author presents experiences learnt from other nations in building the innovative startup ecosystem as well as some suggestions for this work in Vietnam which are presented in form of questions for research.

Keywords: *Startup ecosystem; Innovation; Policy tool.*

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1. Introduction

The notion of “innovative startup ecosystem” gets popularized largely but academic researches and practical implementation of innovative startup ecosystems, due to their different approaches, come to different analysis, stands for policies and warning conclusions. This leads to the overlap of notions, concepts and approaches in building the strategic orientations for development of innovation based startup ecosystems in many countries. From another side, despite of a huge number of research works for ecosystems where many of them deal only with the context of certain actual countries and territories, they cannot provide a global view applicable for other countries with quite different specific conditions. Then the systematization of the related notions and concepts, analysis of specific features of ecosystems as well as consideration of practical matters would set up the platform necessary for determination of policy priorities in building and promoting the innovative startup ecosystems.

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2. Notions of innovative startup ecosystems

The “*Ecosystem*” is the notion firstly introduced by Tansley (1935) in researches in biological field. The notion was described as a harmonized system where living and non-living entities interact each other and with environment. Moore (1993) is the first researcher using this notion in economic researches. Motoyama et al. (2014) and Spigel (2015) confirm the interlinks between elements set an important aspect of startup ecosystems. According to Moore, these interactive relations are formed between enterprises and in their co-evolutive development. The artificial startup ecosystem, in its nature, is designed to meet evolutive trends around a group of main entities, at least at a concrete time moment. Their actions usually are limited in local regions but some times they can get out and go to the global scale. The entities in the ecosystem have organic and co-evolutive links.

The “*Startup ecosystem*” inherits some notions from previous approaches and scientific researches while explaining the linkage between the development of a natural geographical region and the convergence of certain groups of entities and various economic activities in the same geographical region. The research by Neck et al. (2004) on the startup system (a system which changes with time, has changing components and changing relations) is considered as the background-setting work for the notion of “the innovative startup ecosystem”.

The “*Innovation*”, according to the definition by Oslo Manual (OECD, 2005), is “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations”.

Vietnam Law on Science and Technology (2013) gives the definition: “Innovation is the creation, application of advances, technical-technological solutions, management solutions to enhance effective socio-economic development, productivity, quality, added values of products and goods”.

In addition to that, many other researchers give definitions of “innovation” but, in summary, *the innovation needs to have the novelty and the applicability*”. Innovations are based not only on technologies but also on many other elements which do not have technological nature. Innovations are considered as important driving forces for economic growth in general, a basic and important factor for renovation of growth models which shift from the model with purely producing components (natural resources, simple workforces and capitals) to the science-technology-innovation (STI) based model. Innovations are realized in many different sectors and fields

but they are seen best in innovation based entrepreneurship (called as “innovative entrepreneurship”).

The “*Innovative startup ecosystem*” (since now on called shortly “startup ecosystem” or more simply “ecosystem”) is a new notion which gathers many different definitions and, up to the present time, there is no definition which gets the large consensus of views (Stam, 2015) due to different contexts, scales, designs and data of startup ecosystems.

Shane (2009) considers the startup ecosystem is a society of founders with rich ideas and skills, young companies in early stages with own talents, incubators with consultants and capitals, and communication channels. Vogel (2013) defines the startup ecosystem as a “community of components mutually interacting inside a geographical region including diversified and inter-dependent actors (such as entrepreneurs, institutions and organizations) and other factors (market, legal frame, supporting systems, entrepreneurial culture) which develop with time, co-exist and interact, and all these components push up the establishment of new enterprises”. Stam (2015) considers the notion of startup ecosystem emphasizes the process in a community of inter-dependent factors. The conditions of system nature (such as network of individual entrepreneurs, leaders, finance, talents, knowledge and supporting services) compose the heart of the ecosystem and the presence of these conditions with their mutual interactions would decide the successful development of the ecosystem. Mack and Mayer (2016) give the definition of startup ecosystem as a system with mutually interacting components which push up the establishment of new enterprises in actual contexts of the region. Theodoraki and Messeghem (2017) consider the ecosystem can be described as a common context for purpose to push up the entrepreneurship within certain region. Spigel (2017) gives the definition of startup ecosystem as “the combination between local culture perspectives, social networks, investment capitals, universities and positive economic policies which offer the environment for renovating projects. The startup ecosystem is a combination of social, political, economic and cultural factors of a region which support the development and growth of enterprises through innovations, stimulate new individual entrepreneurs and other entities to accept risks at early stages, and support high risk enterprises”.

In Vietnam, the “Guidelines for building up the plans for implementation of the project Supports for National Innovative Startup Ecosystem up to 2025” by Ministry of Science-Technology (2017) gives the definition that “the startup ecosystem includes individual entrepreneurs, teams of individual entrepreneurs and supporting actors for development of startups where there

are State policies and laws (regulations for establishment of enterprises, venture investment organizations, taxation regulations, capital withdrawal mechanisms and etc.); infrastructure for startups (shared workplaces, infrastructure for tests and experiments for making prototypes and etc.); capitals and finances (venture investment funds, individual investors, banks, financial investment organizations and etc.); entrepreneurial culture (business culture, culture to accept risks, ventures and failures); startup supporting service suppliers, startup training coaches, startup consultants; universities, training courses for startups, investors for startups, human resources for startups, domestic and abroad markets". Actually, the term of "*startup ecosystem*" is used largely in management and policy planning works for science and technology sector in Vietnam.

The scope of startup ecosystems can vary largely, from some buildings to the whole country (a region with 100 km long radius - according to Report for Classification of global startup ecosystem) which share the use of common resources. Cukier et al. (2016) give the definition of ecosystem as "a region limited within 30 mile distance (or 1 hour drive distance) and set up by individual entrepreneurs and different supporting organizations which interact in a complex system to establish new startups and to develop existing companies". Gauthier et al. (2017) consider that the ecosystem can be set around a group of resources of shared use usually in a 60 mile radius region (about 100 km).

Briefly, despite of being defined in many different ways, basically the term "*Innovative ecosystem*" can be understood as *a concrete geographical region with the rich convergence of innovation based entrepreneurially spirited individuals, companies and enterprises and supporting organizations which get formed through historical process and develop thanks to organic and co-evolutive links between entities in the ecosystem. Contributions as well as global impacts of single individual actors are all necessary for growth and development of innovation based entrepreneurial activities.*

3. Specific features of startup ecosystem

3.1. Structural features

Every startup ecosystem, though its historical evolution process, sets up its own structure including components with organically bound relations.

Researches for components of startup ecosystem in the world today have two approaches. One is *the Global approach* proposed by scholars who study and determine all the components of the ecosystem (*Van de Ven, 1993; Neck et*

al., 2004; Isenberg, 2011; Suresh, Ramraij, 2012; Feld, 2012; Mason, Brown, 2014; Spigel, 2015; Mack and Mayer, 2016). This approach leads to synthesis of all the entities which may be present in the ecosystem, according to Motoyama and Knowlton (2014). The global approach, however, has certain limitations due to its hidden concept of the uniformity of the ecosystem. This conclusion is based on identification of specific features of startup ecosystems and low impact causing entities. Agreeing with this concept, majority of recent studies, despite of confirmation theoretically of the similarity of ecosystems, do not distinguish actual conditions of the region. Researchers, then, start dealing with the hypothesis of non-uniformity of ecosystems. They follow *the Extremely simplified approach* to get answers to the question where are the most important components of an ecosystem, and how they connect between themselves and develop (Motoyama, Knowlton, 2014). Even if these researchers follow the global approach to view ecosystems in all the aspects, they themselves agree that different entities may have different roles in the same ecosystem, and naturally in different ecosystems the entities have also different roles as well as different combinations of components specifically for every ecosystem. Here the specific features of the region should be taken into consideration while talking about ecosystems (Isenberg, 2011; Spigel, 2015).

3.2. Features of knowledge spillover

Scholars of entrepreneurship research developed a new theoretical frame of entrepreneurship which is known as “*Knowledge Spillover Theory of Entrepreneurship*” (KSTE). Accordingly, the entrepreneurship opportunities get impacted externally (Acs *et al.*, 2009, 2013). This theory determines that “knowledge are sources of entrepreneurship opportunities”, and confirm that “individual entrepreneurs play important roles in commercialization of knowledge developed in large enterprises or research organizations” (Qian and Acs, 2013). Individual entrepreneurs act as channels for knowledge spillover by bringing knowledge into market. According to this theory, many opportunities rise from knowledge rich environment (Acs *et al.*, 2009). This study considers the role of the human force capital and its role in promotion of entrepreneurship activities. The human force capital is defined by some scholars as knowledge and skills present in humans (Qian and Acs, 2013).

Also, Qian and Acs (2013) introduce the notion “*entrepreneurial absorptive capacity*” according to which the level of entrepreneurial knowledge spillover depends not only on its speed and level of knowledge creation but on entrepreneurial absorptive capacity of every actor. “*Entrepreneurial absorptive capacity is defined as the ability of an*

individual entrepreneur to understand new knowledge and realize its values and then commercialize it through establishing an enterprise” (Qian and Acs, 2013). Entrepreneurial absorptive capacities relate to abilities of individuals in creation of new enterprises and not relate to the creation itself. The theory confirms that the creation of knowledge does not always necessarily create enterprises because the creation of enterprises depends on abilities of individuals and help them to realize these opportunities, to calculate values of opportunities and to mobilize resources for commercialization of results from these opportunities.

Some scholars distinguish two important aspects of entrepreneurial absorptive capacity, namely: *scientific knowledge* and *business-market knowledge*. Scientific knowledge are to understand the work to create inventions and to realize their values. Business-market knowledge are to commercialize inventions. *These two types of knowledge are all important for entrepreneurial knowledge spillover.*

In addition to these two types of knowledge, the startup ecosystem approach has the third type of knowledge: knowledge about the entrepreneurial process (*Stam and Spigel, 2016*). The spillover of knowledge on entrepreneurial process is also one of the specific features of startup ecosystem (*Stam and Spigel, 2016*). Some examples shown for this type of knowledge are how to realize challenges when enterprises scale up, how to do pitching, how to attract new suppliers and potential customers during startup stages. Therefore, entrepreneurs play highly important roles for ecosystems because they operate as consultants and set up networks with other entrepreneurs which are factors to increase knowledge volume on startup.

3.3. Cultural features

Recently, among researchers and policy makers, there appears a question: Why some regions become “hot” of startups and innovations while other regions do not. Are there any “attracting” forces which make startup ecosystems set formed at this site but not other ones? Feld (2012) made studies and summarized explanations through 3 basic elements for formation and prosperous development of ecosystems in economical, geographical and social aspects where the geographical aspect based on the concept of “Creative class” by Florida (2002) is one of the most reasonable ways. This theory describes links between innovations and the “Creative class” including scientists, engineers, entrepreneurs, professors, artists and any ones whose jobs are to create new ideas. They are main driving forces for economic development in post-industrial sectors. Florida (2012) also confirmed these individuals wish to live in the regions with the main specificities of open mind

culture and tolerance for eccentricity. More important, these peoples want to live and to communicate with creating communities. Therefore, a site with people from the “Creative class” would have better competitive positions than other sites though attractive magnets for creating individuals. This way of explanation for the formation of startup ecosystem gets attached to networking effects because every creation made by individuals would increase values of the ecosystem (the more creating individuals are in one site the more individuals of the “Creative class” get attracted to this site and this increases the values of the site). It is the “attracting forces” of the creating community which makes individuals of the “Creative class” converge and form the ecosystem thanks to organic links between entities in the system. The diversity and creativity of a site can cause impacts to attraction and convergence of human resources (*Lee et al., 2004*). They also find practical evidences for the fact that the formation of an enterprise relates to creativity.

Briefly, an innovative startup ecosystem is characterized by the presence of a creating community, open mind culture and tolerance for eccentricity, entrepreneurs-businessmen and long committed supporting organizations, all of them gather together in certain geographical region.

3.4. Kinematic energy of a startup ecosystem

Some scholars consider that the ecosystem passes 4 phases of development: nascent, growing, maturity and self-sustainable (*Cukier et al., 2016; Gauthier et al., 2017*). Mack and Mayer (2016) provide analysis the 4 phase life cycle of ecosystems: nascent, evolving, stability and decline. Therefore, every ecosystem has its kinematic energy and develops with time, and creates cumulative growth in new enterprises (*Stam and Spigel, 2017*). The ecosystems should not be considered as standing still but, instead, they should be recognized as continuously evolving and basically incomplete. In every phase of development the ecosystems have their own specific features of policies, finances, culture supports and etc. Startup ecosystems, even related to industrial, technological, organizational, institutional and policy contexts (*Autio et al., 2014*), are not bound to single technology or industrial sector. The objective of existence of a startup ecosystem is its own renovations.

3.5. Center of startup ecosystem

According to Feldman (2014), *the startup entrepreneur guides the ecosystem through its formation and hold it healthy* and needs to commit longtime with it, most ideally for a 20 years perspective for its development, even in time of economic depression or peak. Stam and

Spigel (2016) confirm more clear that it is startup entrepreneurs but not enterprises who locate in the center of the ecosystem.

Startup entrepreneurs can play numerous different roles in an ecosystem such as investors, consultants, advisors, instructors of training courses for startups and etc. For example, successful startup entrepreneur can play the roles as models and then encourage other individuals to start their own business activities (Isenberg, 2010, 2011). Therefore, successful stories help entrepreneurial mindset to accept overall risks and finally lead to formation of startup culture. Isenberg (2010, 2011) calls it “the Law on small number”. Mason and Harrison (2006) consider that these startup entrepreneurs control and guide the re-startup process.

3.6. Organic interactions inside startup ecosystems

Startup ecosystems are characterized by organic interactions between entities inside ecosystems, help the ecosystems to evolve and develop. There are 3 main relations which attract attentions for every startup ecosystem (Huong Nguyen, 2015): (i) *Interactions between startup entrepreneurs*; (ii) *Interactions between official supporting organizations*; and (iii) *Interactions between startup entrepreneurs and official supporting organizations*.

3.7. Innovation and ambitions of growth

Aulet, Murray (2013) and Isenberg (2011) determine that innovations and ambitions of growth are 2 main specific features of entrepreneurship. This growth is not limited within geographical boundaries and by its the main factor which distinguishes startups from SMEs.

3.8. Overlap

Smorodinskaya et al. (2017) state that the ecosystem which is introduced to use without being clarified leads to increasing ambiguity is access to this ecosystem. Therefore, it is necessary to interpret well the notions related to startup ecosystem.

First of all, the notion of startup ecosystem needs to be distinguished from the one of industrial zones, industrial clusters and innovation systems. According to Stam and Spigel (2015), industrial zones focus on SMEs, the local government and industrial clusters focus on innovation enterprises, innovation systems focus on innovation enterprises and the Government focus on startup entrepreneurs. Despite of the theory on innovation systems, the notions of industrial clusters and industrial zones include the role of startup entrepreneurs but it is necessary to mark that it is not always compulsory that industrial zones have startups with high growth potentials.

Industrial clusters and industrial zones are formed mainly from concrete industrial sectors while, according to Spingel (2015), a startup ecosystem gets formed from a set of ununiform enterprises.

In addition, the innovative startup ecosystem should be put in frame of relations with other ecosystems such as startup ecosystem, business ecosystem, innovative ecosystem and knowledge ecosystem. In their nature, for any approach, all the components are present in these ecosystems. Only their roles in different ecosystems are different.

Clarysse et al. (2014) and Smith (2013) consider that the business ecosystems relate to value networks and, through them, enterprises supporting each other can realize competitive advantages. Knowledge ecosystems include organizations which are clustered geographically and get benefits from their positions in knowledge production activities (*Clarysse et al., 2014*). Knowledge ecosystems focus mainly on exploration and production of knowledge more than exploitation of knowledge (*Valkokari, 2015*). Knowledge ecosystems, as rules, gather around knowledge producing centers such as universities, public research organizations, large enterprises with R&D units (*Clarysse et al., 2014*). In the meantime, innovative ecosystems provide environment favorable for innovation and growth (*Ritala and Almpantopoulou, 2017; Smorodinskaya et al., 2017*). And, innovative startup ecosystems are environment to push up growth of innovation based startup activities.

According Valkokari (2015), all being “players”, every actor plays different roles in different ecosystems. Inversely, ecosystems inter-relate through similar actors. Thanks to inter-linking roles of the actors, the innovative ecosystems interact and co-develop side by side.

4. Practice of building of innovative startup ecosystem in some countries

Studying the history of formation and development of startup ecosystems of 3 groups of selected countries, namely: (i) Group of developed countries (US, Israel, Finland); (ii) Group of countries in the region (Singapore, Malaysia, Thailand); and (iii) Group of emerging economies (India, China), it is worth to note the following points:

- Ecosystems usually start from a region gathering intellectuals and creative class individuals; typically it was the case of the startup ecosystem in Silicon Valley (US), the startup ecosystem in Helsinki (Finland) or Block 71 in Singapore;
- Innovative ecosystems sometimes start after heavy incidents, social and economic crisis of national or regional scale; typically it was the case of the startup ecosystem of Israel (starting after the financial crisis of 1980s

or the startup ecosystem of New York (starting after the collapse of New York finance market (2009). In these cases, usually the smart public planning works or policies by the Government offer opportunities for development of innovation based startup ecosystems.

- The Government is not the actor forming and developing ecosystems by mechanically gathering together components and then assembling them into the network of an ecosystem. Even in the case of Silicon Valley, the project “Stanford Silicon Valley - New Japan”² confirms that there was no local government in the valley and Silicon Valley was not formed by a strategic policy of the US Federal Government. Instead of that, Silicon Valley was formed and developed in organic ways where the components were formed and developed gradually and inter-linked together in a historical process. This means that the specific features of Silicaon Valley have no way to be duplicated in any place in the world. It is the fact that the US Federal Government supports its large research programs through certain organizations such as National Institute of Health (NIH), National Science Foundation and the Army which cause significant impacts to orientations of scientific research activities and then Silicon Valley shifts attentions to these fields.
- Startup ecosystems cannot be build “overnight” but require long time commitment of many factors.
- Even with global approach for policy making practice, every ecosystem, on basis of actual conditions of the country and region, should have a suitable road map for its formation and development.

It is worth to note that every ecosystem get attached to a geographical region and the socio-economic context of the region. For this reason, the successful models are illustrated for reference purpose. The building of strategies for development of innovative startup ecosystem in any region and country should be based on practical conditions coupled with flexible and well adjusted policies for every development stage of the targeted ecosystem. Smart policies by the Government would offer “opportunities” for formation and development of the ecosystem.

5. Some remarks for innovative startup ecosystem in Vietnam

5.1. Achievement and existing problems

Since early 2000s the startup ecosystem in Vietnam starts with success of some enterprises such as VinaGames and VC Corporation. According to a

² <<http://www.stanford-svnj.org/>>

report by Topica Founder Institute, during the last 6 years, the number of startups in Vietnam increases significantly, from about 400 by 2012 to about 3000 by 2017. Today, the third generation of startups starts gaining remarkable successes in various sectors including educational technologies, agriculture, financial technologies, on-line trade, entertainment, communication and etc. Innovative startup activities even being in starting stages get increasingly excited.

Having the good population structure, stable economic growth indexes and facing IR 4.0 contexts, the Party and the Government have maintained supports and close guides to offer favorable conditions for development of innovative startup ecosystems. This is the solid prerequisites for gradual formation and development of Vietnam innovative startup ecosystems, making remarkable steps forwards. Many policies and legal documents were issued in recent time. Typically Decision No. 844/QĐ-TTg by the Prime Minister approving the project “Supports for National Innovative Startup Ecosystem up to 2025” issues and implements some concrete activities, tasks and solutions to set up the “environment” for formation and development of components of Vietnam startup ecosystems. Some other projects can be noted including the MOST project for commercialization of technologies in Vietnam following Silicon Valley model and Vietnam - Finland Innovation Partnership Program (IPP2).

Even gaining certain achievements, the building and development of innovative startup ecosystem in Vietnam still have some existing problems, namely:

- Mechanisms, policies and programs at the present time seem to be focused on “startups” as the main actor of the ecosystem and to indicate directions to promote other components individually without producing a global design to offer conditions and opportunities for the existence and sustainable development of the whole ecosystem. Also, these projects, in majority, are classified as short term (2-5 years) and then are unable to settle long term problems for development of Vietnam startup ecosystems such as legal regulations, policies and mechanisms for startup activities;
- Issued support policies lead to establishment of startups in many fields and largely over the whole country without indicating clearly a global approach with firm determination of objectives, solutions and road maps to offer “opportunities” for formation and development of innovative ecosystems;
- Startup entrepreneurs and creating communities are not really gathered in national scale research programs jointly for settlement of national and regional problems;

- Crucial needs of the creative class, startup entrepreneurs and startups remain unsettled including the IP right protection, market for startups and etc.;
- Lack of specific policies focused for startups and enterprises with high growth potentials who presently remain to be treated as SMEs.

5.2. Some thoughts for conclusion

We note that actually research works for startup ecosystem in Vietnam focus mainly for startups or typical successful cases such as Silicon Valley (US) or Startup nation (Israel) while expecting to apply experience from these models to build up the startup ecosystem in Vietnam. But Vietnam has its own characteristic features in terms of culture, resources, institutional system, policies and etc. Then it is necessary to conduct deep and global studies of both theoretical and practical nature before expecting to apply effectively and sustainably the models recognized successful in other countries. The author wishes to refer to the remark by Mrs. Tran Thi Thu Huong, Managing Director, IPP2³ Project, for conclusion: “Impossible for Vietnam to copy any model in the world, even successful, for application without taking into consideration its own specific conditions. Good experiences learnt from other countries would appear effective when being embedded in Vietnam environment. We can do successful breakthrough moves forward when we manage to identify our own path based on our advantages and authentic needs”./.

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³ Mrs. Tran Thi Thu Huong, Director, IPP2: <http://tiasang.com.vn/-quan-ly-khoa-hoc/IPP2-Phong-thi-nghiem-chinh-sach-12685>

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