Is Co-working Increase Survivability?
Study on How Collaborating and Networking Facilitates Open Innovation Process for Startups

Lesson Learned from Co-working Spaces in Jakarta

Elissa Dwi Lestari

Management Department, Faculty of Business. Universitas Multimedia Nusantara, Tangerang, Indonesia
elissa.lestari@umn.ac.id

Abstract—**Startups, as they are bounded to their liabilities of newness and smallness, need to collaborate extensively with their external partners through the open innovation process. This study aims to depict Co-working space's pivotal role in building up a working innovation ecosystem that facilitates open innovation for startups. To get a more deep understanding of the phenomena, this study used an exploratory study based on three case studies of Co-working spaces operated in the Jakarta region. The study shows that the open innovation process among startups is not naturally existed, but instead, it is purposefully designed by the role of a community manager who acts as the ecosystem catalyst. The community manager becomes the ecosystem enablers that facilitate the networking process by connecting members. As a result, these activities will help the emerging of mutual connection and collaboration processes among members that empower open innovation among startups members. The multiple-case design makes the study conclusions might be difficult to generalize. Future research, including quantitative studies, will help the conclusions examination and the knowledge enrichment of start-ups' open innovation process. This paper will enrich the knowledge concerning how Co-working spaces member seizing opportunities that lead to the open innovation process.**

Index Terms—**Co-working space, inter-organizational collaboration, inter-organizational networking, open innovation, startups**

I. Introduction

Startups play an important role in Indonesia's recent business and industries. As an example, we can see the latest development of digital startups in Indonesia. They are not only become the leverage for the birth of high-quality new ventures that are positively impacting and solving problems in our community but also plays a crucial role in providing new job opportunities to the community. Indonesian Minister of Communication and Information had said that the digital economy in Indonesia would reach US $ 130 billion or Rp 1,831 trillion in 2020. This would contribute to 11% of Indonesia's gross domestic product (GDP) [1].

Startups are a company, a partnership, or a temporary organization that is designed to create a scalable and repeatable business model [2] In general, they have several characteristic such as The age of the company is less than 3 years, the number of employees is less than 20 people, generate income of less than $ 100,000 annually, In the developing stage of their business, operates in technology and Products made in the form of applications in digital form in general and usually operates through a website. Startups in Indonesia are classified into three groups namely game creator startups, educational application startups and trade startups such as e-commerce and information [3]. Since their liability of newness and smallness bounded startups, they tend to have limited access to adequate resources [4]. To be survived in their scarcity of resources, these startups need to form cooperation with external partners in both, development stage and commercialization stages of their ideation process or technological development [5][6]. Therefore, "open innovation" plays a vital role for them [4] to overcome both the newness and smallness liabilities [7].

In contrast to "closed innovation," the open innovation has been described as an innovation process that goes beyond organizational boundaries and orchestrates the active involvement of multiple parties or organizations. The successes of open innovation depend on the core competencies and skills-sharing activities among collaborative organizations. The open innovation was being initiated after the identification of entrepreneurial opportunities by a partner organization, known as "broker," and shares the entrepreneurial opportunities with other

partner organizations that finally form the business network [8][9].

Like other business organization, entrepreneurial activities for startups also demands a physical working environment that enables them to increase creativity and innovation performance by facilitating a productive and supportive business ecosystem. Thus, this working environment exist to help business, not only to generate knowledge but also to develop social and business network[10][11]. Even though business creation can take anywhere, Co-working space is as a shared working space that facilitated both intangible and social entrepreneurial support that fosters entrepreneurial networking and social interactions for generating new entrepreneurial opportunities for small firms and startups [10]. Moreover, the social interaction opportunities that Co-working space offer also enables collaboration opportunities [12][13][10][14] temporarily in which business outcomes are achieved from exchanging a combination of complementary skills and social relations among peers working in the space [12][15]. This collaboration then accommodates each member to exchanging knowledge [16], new ideas that could trigger innovation performance, and increase productivity.

In number, the growth of Co-working spaces in Indonesia has reached 400 percentages within two years. Based on the association record, in 2016, there were only 45 Co-working spaces in Indonesia, the number then multiplied become almost 200 in June 2018 [17]. Moreover, in Indonesia, Co-working space growth has occurred as a result of digital startup and micro-business development. Quoting the statement of Rudiantara, Indonesian Minister Communication, and Information, there were approximately 1.720 startups in Indonesia. This number puts Indonesia as the fourth nation with the most significant startup number after the United States, India, and the United Kingdom [1]. Thus, the growth of startup's development in Indonesia then also seen as one of the opportunities that could be seized by Co-working space business owners.

II. RESEARCH QUESTIONS

The firm, like Start-ups, as they are bounded with liabilities of newness, would looking out for resources and knowledge with others through the resources sharing process, in which they can develop complementary and reciprocal complementary advantages. The sharing process will enable them to create network behavior that can be used as a learning medium to strengthen entrepreneurial activities [18][19]. Hence, social relations are becoming the main factors of productivity across Co-working spaces that provide a collaborative environment for startup and digital nomads to deploy new production opportunities in non-hierarchical situations [15].

The open innovation process could facilitate the process of network maximizing through the collaborative environment for mutual benefits. In contrast to the close innovation that bounded by internal organization context, open innovation has exceeded the boundary of an organization by mutual identification and shares of business opportunities among partner organizations from the business network. This business network then nurtures innovative ideas that could be utilized for the new product or new business creation that could fit with the market needs [8] Thanks to the advancement of information and communication technology (ICT) that accelerates the creation of collaborative business networks in which the startup's open innovation is being initiated.

Previous research has shown how startups explore, absorb and exploit knowledge from larger firms through open innovation practices to enhance their entrepreneurial process and activity [20] [4] However, there are very few studies on open innovation among startups, especially in regards to Co-working . This paper aims to fill a part of this gap. Our main objective is to analyze how co-working space collaborative environment embraces the open innovation process. We would like to answers the following questions:

RQ1. How Co-working space members collaborate to increase their mutual performance?

RQ2. How Co-working space members utilize networks to foster the open innovation process?

III. RESEARCH OBJECTIVES

1. In general, this research will be useful for Co-working facilitators and Co-working users. The research findings will give practical insight into how the Co-working space ecosystem could facilitate inter-organizational collaboration and networking processes for the user.

2. Since there is still little academic research about Co-working space, especially in Indonesia, this paper aims to deliver a comprehensive understanding of co-working phenomenon as an entrepreneurial ecosystem, in where the member could seizing opportunities throughout the social interaction process (collaborating and networking) that lead to the open innovation process.

IV. LITERATURE REVIEW

A. Co-working

Kubatova [21] defines Co-working as a modern form of work or individual enterprise realized in a shared work environment, so-called Co-working center, together with other people who independently perform their respective tasks, usually using information and communication technologies.

Co-working combines various elements of home-office concepts, office communities, telecenters, telework, virtual work, virtual teams, incubators, and communities of practices. However, it also offers flexibility, autonomy, and social interaction opportunities that the cross-sectoral working community usually has. In contrast to project teams or virtual teams which often bound in a rigid hierarchies of established firms, Co-working -users can be more flexible in choosing teams, work processes [16] and shared office settings (where furniture such as desks can rent on a daily, weekly, or monthly base) [22] [23].

Co-working space is defined as workplaces that shared by workers who are not members of the same organization [24]. In this sense, Co-working space also accommodates an "community-based sociocultural ecosystem of exchange," where networks of people are linked together by shared social networks and shared resources [25] that enabled their members to share valuable networks and resources that importance that hence perceived as a strategic tool in attaining innovation [26].

Co-working spaces can provide high levels of autonomy. This kind of autonomy includes access to use office infrastructure and amenities at self-regulated working hours. Different from how regular hierarchy-based working settings worked, Co-working -users have the autonomy to work and communicate to whom, where, when, how, and how long, even how intense and open the communication is. Co-working -users may deliberately take the opportunity—to interact with others, whether on loose terms or very intense, strictly only related to job matters or open for personal issues too, to receive feedback and to provide feedback, and also to intensify private and business relationships. Social interaction may have diverse forms and intensities, that leads to new inspiration and knowledge. This inspiration and knowledge may be shared among Co-working users not only during the physical presence in the Co-working space but also afterward [16].

B. Inter-organizational Networking

The relationship that occurs among the Co-working members facilitates the socio-cultural networks, which will sustain real communities [27], and it can significantly improve productivity [28]. Aaboen study [19]found that inter-organizational network enables new ventures to expand their network more efficiently to create beneficial value. With networking, new ventures can build up their capacity to expand their complementary business.

At the early stage, Co-working spaces can provide the opportunity to develop sophisticated networks for the entrepreneurs, over and above the common social ties which they usually begin with [29] [30]. A

network with lots of potential knowledge, skills, and contacts will become a vital force for the 'incubation' of the new and young firm or founder teams to achieve the value they create [18]. Thus, Co-working -users shape a new venture that may improve innovation, growth, and performance, when they can utilize the network advantages in the Co-working -space [29] [18]. Every social network capital is unique, and It has diverse effects on the success of the Co-working -users as for other entrepreneurs [18].

C. Inter-organizational Collaboration

Collaboration has been one of Co-working core features, as they accommodate a collaborative environment that facilitates new ideas exchange processes between members. As part of communities, Co-working space members developed a working relationship that can be facilitated with connections, networking, and collaboration through co-working space [31][32].

Capdevilla study of different Co-working spaces in Barcelona [33] found three type of a distinctive complementary collaborative approaches which are : 1) Cost-based collaboration that aims to reduce operation or transactional cost; 2) Resource-based collaboration which is the result of that aims to gain valuable learning or open access to new resources and knowledge; 3) Relational collaboration that aims create synergistic results, investing actively in the community building dynamics. This finding is aligned with Bueno et al research findings in 2018 [24] which stated that social interactions in the Co-working spaces are proper places to initiate collaborative activities with aims to producing highly productive work, based on the opportunities offered by some of the core features of these spaces, such as social interactions, new opportunities, and knowledge sharing. The collaboration concept also aligns with Lange, who concludes Co-working spaces as bottom-up spaces participated by workers who strive for independence, collaborative networks, and politic, this shares a set of values in a 'collective-driven, networked approach of the open-source idea translated into space.' The idea that underlying this assumption is that social relations are the main factors of productivity across Co-working spaces, conceived as collaborative environments where microbusinesses and freelancers deploy new production opportunities in non-hierarchical situations [15].

D. Open Innovation

Recently, innovation is perceived as one of the key survival factors needed to be succeeded in a competitive business environment [34]. For startups that are considered as a new venture that bounded with technical and financial resources limitation, these resources limitation were usually be labeled as the liability of smallness, which encouraged small

companies like startups to innovate in collaboration with other firms [4] The innovation process involving the collaboration process with external factors to improve firm competitive advantage and performance is called open innovation.

From the business perspective, the open innovation process can be defined as the new idea initiative of a product or process, which occurs outside individual firm''s boundaries [8]. Moreover, Chesbrough [35] saw open innovation as a system where innovation is not exclusively developed internally within a company but also utilize external sources. External knowledge sources may include clients and users, suppliers, competitors, universities, or public institutions. Participants in open innovation activities agree to contribute to the development of a new product or service that will be sold to the market [36].

This kind of innovation initiates after identification of business opportunities by a partner organization, known as "broker" and shares the business opportunity with other partner organizations that finally form the business network. This business network nurtures innovative idea to develop new products or new business processes according to the market needs. Today's advancement of Information and Communication Technology (ICT) contributes to create such a collaborative business network, where the initiation of an open innovation starts up. This open innovation culture among the business network helps organizations to keep pace with competition and to retain sustainability [8].

V. RESEARCH METHODOLOGY

A. Research Design

To get valuable insights into the phenomenon, the researcher use case studies as the qualitative approach., as described by Stake [37], qualitative case study as the elements combination of naturalistic, holistic, ethnography, phenomenology, and biographical research methods [38].

In terms of definitions, Case study is defined as the investigation and analysis of single or collective cases that are meant to seize the complexity of research object [37] as cited in [38]. Case Studies is one of the research method that combines individual and or group interviews with technical analysis and observation records. Case studies allow researchers to explore individual or organization, via a complex intervention, relationships, community, or program [39] and support further deconstruction and reconstruction of various phenomena. Moreover, Creswell [40] defines case study as an exploration of a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information. To get a better understanding

of how Co-working spaces ecosystems become catalysator for startup survival than the researcher using case studies methodology. Case studies methodology linking relationship within and among cases into the development of core values, intentions that particularistic, descriptive and heuristic [38] The multiple cases study is used to understand the differences and the similarities between the cases [37] [38] that in turn will provide the literature with an important influence from the contrasts and similarities among cases [41].

In this paper, the researcher using an explanatory Case Study approach. The explanatory case study is used when the researcher attempt to answer questions to clarify the causal relationship in real-life phenomena (cases), which too complex to be described via surveys or experimental strategies. In this paper, the unit of analysis of this research is the collaboration and networking process among Co-working members in ways to increase startup survivability.

Data Collection is done by using several methods like triangulation research strategy, which means using different types of materials, theories, methods, and research in the same study [42] [43]. The primary source data consists of open-ended questions (open questions) that were asked by the researcher through in-depth interviews with Co-working spaces stakeholders in Jakarta Besides, in-depth interviews, the researcher also conducted on-site observation by sitting in a Co-working space member for weeks during the data collection.

B. Data Collection

Primary data collection for the research was obtained through a snowball sampling technique where the researcher asked for informant referrals that suit well with the research object. By applying this, the researcher conducts direct observation and in-depth interviews with three Co-working spaces in Jakarta, which facilitating business incubation for startups. The interviews were conducted in May until July 2019. The primary respondents of the research were the Co-working space co-founder, community managers as co-working spaces providers, and startups as co-working spaces users. The selections of informants both form Co-working space providers, and the users' side is chosen to facilitate the triangulation and validation process on how Co-working spaces ecosystems become catalysator for startup survival for this case study.

TABLE I.   CO-WORKING SPACES AND INFORMANTS DESCRIPTION

Co-working Spaces/ Location	Informants	Informants Description
U in Jakarta, established	D	D is a community manager in U since November 2018. Before

Co-working Spaces/ Location	Informants	Informants Description
in 2017 and running only in 1 location		becoming a community Manager, D was working in one of the co-working space in Semarang. D responsibility is to maintenance members by providing, creating and exploring community event that fit with members needs
	F	F is a community officer in U since October 2018. F responsibility is to manage member's administrative matters likewise contract and invoices
	R	R is CEO of Startup that has been using U space since December 2018. R has just come back from Canada and established Startup, which focused on providing Human Capital Information System solutions.
	L	L is Program Director of Startup that has been using U space since December 2018. L is running a startup that provides soft skills learning and development solutions.
S in Jakarta established on 2nd April 2016 and has two locations	B	B is the co-founder of S Co-working space. He had studying Co-working spaces business model and design through more than a hundred youtube videos since 2015 before opening up his own.
	M	M is Co-working Space S, community manager. M' main responsibility is to develop community program and events
	W	W is Director of Startup that has been using S space since the end of 2017. W is running a startup that provides IT and financial and tax management solutions.
C in Jakarta, established in 2015 and has more than 10 locations that spread from Bandung to Bali	J	J has been working as the community manager in C Co-working space
	A and D	A is working as the community manager, and D is working as a graphic designer at V Start-up, a platform community influencer.

Source: Researcher's primary data, 2019

VI. CASE STUDY ANALYSIS

Startups as a lean business are constrained with their liabilities of newness and smallness [4]. This adversity of adequate resources is compelled startups (especially at their early stage) to manage and optimize the resources efficiently, including for their facility management. Therefore, Co-working space has become one of the best working space solutions for startups due to cost efficiency and accessibility. Besides, affordable and accessible working space,

This research found that members of co-working space cooperate and collaborate to improve their mutual performance and foster the open innovation process through intangible value-added service offered by the co-working space in the form of collaborative working space that is intentionally designed to create a supportive and productive working ecosystem.

A. Community Manager Role as Catalyst Entrepreneurial Ecosystem

Even though the collaborative working space that is found in all the cases are physically well designed to create both social and business interaction among the members, but it is not immediately configured the expected interaction as expected. For all the cases, the opportunity to collaborate does not happen naturally but are crafted design by human intervention, which is conducted by the community manager.

Community manager's role in the Co-working spaces is to maintaining the community members in their Co-working space by creating events or media that, as much as possible, can support and adding values for the community. In case of startups member, the community manager is designed and provided event's content and media that could help startups to get more knowledge about business insights and thus enhance their business performance like ideation process, digital marketing optimization, how to create impactful content marketing, financial management for startups and many more. These events are created by collaborating internally with the community member that has expertise in related issues or with external expertise party by exchanging values.

Besides providing insightful events, in all the cases, the community manager also creates by designed bonding events that could grow members' interaction like potluck. The aim of the bonding events is to embracing members to get to know each other as the initial steps to do business networking. By this sense, the community manager acted as a business catalyst for the member as proposed by J and M as community manager as follows:

"Our position is like a matchmaker. We gather the members. Introduce members to each other. We facilitate them to know each other" (M, S Co-working Space)

"...I think what differentiates foreign people with Indonesian is that in here, we have to be more proactive. I meant we try to connect members here. Get them to know each other. Then, we, C, tried to be the connector for our members. We have a different culture. Outside, maybe, networking occurs by nature. Here, we have to be a connector, facilitator. C try to be more proactive, we asked member's needs, what we can help or provide......" (J, C Co-working Space)"

B. Social Interaction and Networking in Open Innovation Process

Co-working is a recent phenomenon. What differentiates Co-working with formal working space is the possibility do interaction with other organizations that overcome distractions, self-motivation problems, and feelings of isolation as a limitation of working alone at home [12]. In the cases, the need for socialization with other people is the advantage of doing Co-working, as emphasized by W as follows:

"I think Co-working space uniqueness lies in social interaction. If the only work was alone. Everybody work alone. No interaction. Only work then goes home. Ya, it'll look less attractive... The basic of Co-working is the interaction among members. Without interaction, it'll become the same as the formal office. It has no advantages...here we learn to socialize with other members." (W, S Co-working Space)

However, social interaction among members not automatically emerges just because of the flexible working space design. In cases, the stimulation of social interaction among members is socially created by the role of community manager. Most of the time, social interaction emerges as the results of bonding events. Moreover, the development of social interaction among member becomes a prior process for business networking. Through social interaction, members able to exchange their business general information, business ideas or even exchange and expand the possible business network that could be suitable to each business, as proposed by J and L as follows:

"We have Kudapan (Snacking in English) program. Its like lunch program among members. They bring their own foods. We put it into the dining table then we shared it. In the middle of the sharing time, they begin to start the conversation. It might begin with a simple question, like, what are you bring? How are you? Kind of question, and it might evolve to more serious talks like each other's business interests. Sometimes, they continue the agenda after Kudapan. Through there, business matching often happens." (J, C Co-working Space)

"...In U we have a community manager, which is D, who gathered us together. D always said, come on – come up. She initiates potluck. We end up having lunch together at the rooftop. Start from there; I begin to meet new friends from the other tenant's members here, like F form MZ. If I not mistake, they have seven members already. Because it has been a routine agenda here, we become closer as friends, Start from chit chat we began to share a glance of our business." (L, U Co-working space)

C. Inter-organization Collaboration in Open Innovation Process

In all cases, networking accessibility could trigger further inter-organizational collaboration among startups members. In this case, collaboration refers to the interaction among different organizations that works together to achieve a clear and shared aim in a specific context. Like networking, the collaboration among members also prior initiate by the role of community manager.

"As a program and community manager, it's my responsibility to develop a partner's collaboration. Moreover, I also have to develop collaboration with the external party in the form of in house programs for partners or public." (M, S Co-working Space)

In this sense, the inter-organizational collaboration between startup aims to maintain startups' business sustainability by overcoming their adversity of newness and smallness. The social interaction and networking that prior develop enable the member to explore potential opportunities possibility with other organizations. In most cases, the members collaborate by exchanging business ideas, knowledge, and exchanging expertise that can complement each other's competitive advantages. Inter-organizational collaboration enables startups to get complimentary resources they need. In this sense, inter-organizational collaboration plays an important role in resource integration [33] among startups members.

"... For example, V and F. They both by chance are the digital agency. One is a digital influencer platform, and the others are online platforms for freelancers. They are exchanging expertise and benefits. They are matching the business together. They collaborate with each other." (J, C Co-working Space)

"...Here we collaborate, We complement each other, exchanging our expertise. Together we are fighting for life. The important thing is our business survival." (W, S Co-working Space)

"Each member already has its own market. So we should collaborate. We can complement each other's expertise. As much as possible, we can refer the prospective client is to the meeting in S Co-working space so that we can provide a better solution for them. As an entrepreneur is our nature to always seeking business opportunities. Are opportunities can be taken? Are opportunities can be captured? We explore the opportunity together." (W, S Co-working Space) "... We are like families here. We sometimes exchange ideas. Start with simple ideas.... Like, if we talked about ICT development or Human Capital latest issued, for example, we somehow can collaborate. Based on mutual business needs..." (L, U Co-working Space)

The process of open innovation that facilitate by the Co-working space happens both inbound and outbound. In inbound open innovation, external ideas (or technology) entering the organization, while in outbound open innovation organization's internal ideas (or technology), are used by another organization that is better poised to develop further and commercialize it [35]. Encourage by the same spirit to make their business survive, Startups member in Co-working spaces are exchanged and share the business idea, knowledge, potential networking to create possible inter-organizational collaboration to improve their business, product or even expand the business opportunities can be described as follows:
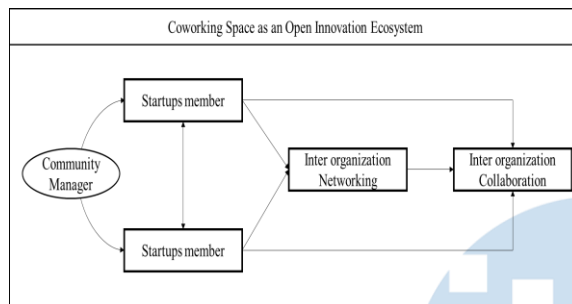
Source: Researcher's own work, 2019

Fig. 1. Open innovation process in co-working ecosystem

However, the speed of the open innovation process also depends on the personal characteristic of the startup's members. The open innovation process happens faster for Co-working space members that have extrovert personalities rather than the introvert one. Also, the culture shyness also limits the possibilities of open innovation in the Co-working spaces, even though already social designed by the community manager.

"The speediness to blend very depends on the person. Some person is very easy to socialize, good in developing the relationship (Type of an easy-going person). It is effortless for those kind people to blend. On the contrary, I am an introvert person. For me, it is very hard at the beginning to start the conversation." (W, S Co-working Space)

VII. CONCLUSION

This article discussed the process of open innovation in co-working spaces ecosystem for startups businesses. Based on observation and in-depth interviews with three co-working spaces in Jakarta, our research found that these co-working spaces facilitate the working ecosystem that supports the open innovation process of startups, especially during their early stage. The innovation ecosystem is purposefully designed by the community manager. The community manager acts as a catalyst by creating frequent social interaction events to open up business opportunities. This social interaction among members

may empower the development of inter-organizational networking and collaborate. Driven by their passion to overcome resources adversity in their early phase, startups utilize the social interaction to exchange their business ideas, both inward and outward that empower the process of open innovation to take place. However, the open innovation process also depends on the personal characteristic of the startup members. These research contributes to the literature of open innovation process, by offering some clues on how co-working space, entrepreneurial ecosystem and the community managers' performance can positively influence the development of social interaction, inter organizational networking and collaboration practices that will lead to startup's open innovation process.

VIII. LIMITATION AND FUTURE RESEARCH

Our study limitation lies in what Yin (2003) defined as an analytic generalization. Therefore, the findings only apply for the three co-working space's entrepreneurial ecosystem that became the subject of the research. Moreover, our study only focused on the co-working practices in Jakarta; while in fact, co-working spaces also mushrooming in other big cities in Indonesia such as Bali, Bandung, Surabaya, Medan, and Makassar. Furthermore, our study also underlined the important role of community managers, who act as the catalyst for open innovation process among startups member. They initially designed community's events that could empower the social interaction which may lead to networking and collaborating. With this findings, future research can explore the possible antecedents for the open innovation process in co-working space ecosystems, such as the system of knowledge sharing, inter-organization learning and the effect of collaborative space design. Besides the antecedents, future research could also investigate the further effects of open innovation processes, such as collaborative process on new product development.

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