

Civil Society Roles in It Industry Development: A Quadruple Helix Approach

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Abstract

Nowadays, business has changed rapidly to keep up the trends. This fast growing business extensively depends on IT Industry. It makes IT Industry becomes one of most important industry within decades. This paper aims to examine the roles of “media-based and culture-based public” and civil society as the fourth helix of quadruple helix model in the development of IT Industry. Quadruple helix model stimulates the creation of idea, innovation, science, and technology through the synergy of government, industry, universities, and civil society. This research uses case study as research design. Semi-structured interview is conducted with three founders of IT startup in Bandung who are also active in business community. The findings show the roles of civil society are mainly for project sharing, talents scouting, product and service quality assurances, building capacity, and a place for business to give back to society. This research also gives a new insight of a place to give back to society that have taken care of the business as civil society roles in the collectivist society.

Keywords: civil society, IT industry, quadruple helix, business community

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I. INTRODUCTION

Quadruple Helix (QH) approach is introduced in 2009 by Carayannis and Campbell as the extension of Etzkowitz & Leydesdorff (1995 and 2000) Triple Helix approach. Triple Helix approach is proposed to explain the constitutional development in knowledge based economy using the relationship of three actors, university-industry-government. Carayannis and Campbell (2009) adds “media-based and culture-based public” and “civil society” as the fourth helix. Society is added in Triple Helix arrangement as the condition and the degree of implementation of such system for best performance affected by the given social system (Rieu, 2014).

The rapid business environment changes caused by globalization requires the synergies between actors in creating a sustainable business ecosystem. The local business needs to improve its business activity to survive the globalization. To improve the local

economy, the synergy between actors, stakeholders, and institution must be built in supporting the local business development. Knowledge economy and globalization have opened up the world, knowledge and information become the power to achieve major development. Local business development is no exception. Creative industry become a mainstream industry in this knowledge and information era (Wang, 2013).

Indonesian big cities local business especially take interest in creative industry, this industry cluster has been supported by the government. In 2008 Indonesian government has created the blueprint of creative industry development plan for 2025 Indonesia creative economy (Departemen Perdagangan Republik Indonesia, 2008). Information technology business as one of creative industry sector has become one sector that growing the most in Indonesia. The growth of software expenditure has reached 16 percent per year

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(Kementrian Pariwisata dan Ekonomi Kreatif Indonesia, 2014). Indonesian government and private institution have collaborated in creating an IT industry development program such as National Movement of 1000 Digital Startup. The emerging of IT industry importance towards the enhancement of Indonesia's global competitiveness has made Indonesian president JokoWidodo visited Silicon Valley in 2016 to meet the CEO of Facebook, Google, and Plug and Play.

Using quadruple helix approach, the role of "media-based and culture-based public" and civil society as the fourth actor in quadruple helix is examined. The roles of this fourth actor has yet been explored by previous researcher and Indonesian government in its creative industry development plan. The fourth helix is marked by the growth of communities in Indonesia especially in Bandung. As the collectivist society, Indonesian people prefer to belong in a certain society group that take care of them (Hofstede, 2016). Bandung Mayor, Ridwan Kamil have noted that there are 5000 communities in Bandung.

This research aims to examine the roles of civil society in the development of IT business as the fourth element of quadruple helix model in Bandung, Indonesia. This study is divided into six section. In part one, we stated the aim of this study. Part two, we present the literature on quadruple helix. Part three, we describe the methodology used in this study. Part four, we present our findings. Part five, we discuss the findings of this study. Part six, contains conclusion to our study.

II. LITERATURE REVIEW

2.1 Quadruple Helix

Henry Etzkowitz and LoetLeydesdorff (2000) developed the triple helix model that stresses the interlaced of three actors: government, industry, and university/academia in generating a regional innovation system. These three integrated actors create to add the novelty in the regional innovation.

They adopt each other activities and collaborate to the certain level with shared aim and strategy in achieving the regional development (Etzkowitz and Leydesdorff 2000; Etzkowitz 2008).

Quadruple helix model is the extension from Triple helix by adding public as the fourth helix, this public helix is respectively being described as the "media-based and culture-based public" and "civil society". "This 'fourth helix associates with "media", "creative industries", "culture", "values", "lifestyles", "art", and perhaps also the notion of the "creative class"' (Carayannis and Campbell 2009, pp. 218, 206). As the triple helix focus on knowledge economy, quadruple helix focus on knowledge society where the context of society is integrated in the production and implementation of the system (Carayannis et al., 2012).

Civil society is an important network dimension addition in evaluating the relation synergy between three actors – university, industry, and government as network affirms connectivity, interaction, and mutual complementarity and support (Schoonmaker and Carayannis, 2010). Delman and Madsen (2007) also delivered about fourth helices organization influencing quadruple helix structure in which are independent, not-for profit, member-based organizations which incorporate financing from the private sector and the government. This fourth helices have a facilitating and supporting role among the original three helices (Parveen et al. 2015).

"Media-based and culture-based public" and civil society in Indonesia especially in Bandung is marked by the growth of member-based organizations known as business community. Bandung is a startup friendly city and known for its great number of business-based community. Not only government but also Bandung society support the development of startup. Building startup becomes one of chosen career other than working in company and people in Bandung accept it. Many people who wants to build startup from other city and country come to Bandung. There is a lot startup

support service such as incubators, accelerators, and technology park in Bandung. Bandung is also a home for two of best universities in Indonesia (i.e. Bandung Institute of Technology and Padjajaran University) which will provide talents for the startup. There are also business communities in Bandung that able to help IT startup to develop its business. Bandung Mayor is one of community's initiator for Bandung Creative City Forum (BCCF), this community are for Bandung creative business founders. There are others well-known IT startup communities that was initiated in Bandung such as FOWAB (Forum for Bandung web developer), Startup Bandung (community for IT and digital based startup in Bandung), and Gamedev Bandung (community for Bandung game developer). These communities get support and financing from various source such as government and private sector. This environment is what makes Bandung as the startup friendly city.

2.2 Creative Industry and IT Industry

UNTAC (2008) defined creative industry as “the cycles of creation, production and distribution of goods and services that use creativity and intellectual capital as primary inputs; constitute a set of knowledge-based activities, focused on but not limited to arts, potentially generating revenues from trade and intellectual property rights; comprise tangible products and intangible intellectual or artistic services with creative content, economic value and market objectives”. Potts and Cunningham (2008) suggest creative industry is considered as the drivers for economic growth and catalyst for diverse creation and systemic evolution facilitators, it plays an important role in innovation system. Creative industry is also known as creative economy because of the use of creativity in generating economy (Florida, 2002).

Howkins (2001) recognizes advertising, architecture, art, crafts, design, fashion, film, music, performing arts, publishing, R&D, IT and software, toys and games, TV and radio, and video games as

subsector of creative economy. Indonesian government has classified its creative economy into 15 subsectors: advertising, architecture, art, craft, culinary, design, fashion, film, music, performing arts, publishing, R&D, IT and software, and interactive gaming (Kementrian Pariwisata dan Ekonomi Kreatif, 2014).

In the era of globalization where technology is rapidly grow and everything is interconnected, the development of IT industry has become significant. Silicon Valley becomes the evidence of the needs of IT industry development. People and businesses in Silicon Valley is competing with each other to bring a new technology for the future especially in IT sector. In UK, IT and software industry is the largest constituent part of creative industry account for 43.5 percent of creative industry gross value added (DCMS, 2016). In Indonesia, the growth of mobile phone user increase 20 percent in 2014, this makes the mobile phone penetration in Indonesia reaches 116 percent (Kementrian Pariwisata dan Ekonomi Kreatif, 2014). This high number of penetration has encouraged the increasing software expenditure in Indonesia. The growth of software expenditure inspire people to create software that will lead to the birth of IT startup.

III. METHODS

The primary aim of this research is to examine the role of civil society in IT business development. Qualitative approach is considered suitable for exploratory research and for use in field that is not clearly determined (Easterby-Smith et al, 1991; Creswell, 1998). Given the the role of civil society in IT business development is in a field not well understood, this research is exploratory in essence and qualitative methodology is believed appropriated. To provides the examination of the recent phenomena in limited context, this research uses case study as research design (Yin, 2009).

The cases for this study were selected for the following reasons: first, startup was in digital based

and IT sector. Second, startup or founder is active in more than one business community. Third, startup is built in Bandung as the startup-friendly city. Fourth, the informants are startup founder. Table 1 provides the profile of the cases for this study. Data were primarily gathered through semi-structured interview as it offers enough flexibility for discussion and exploration while keeping the interview in the right direction (Patton, 2002). Semi-structured interview was begun by asking the roles of each actors in Carayannis and Campbell (2009) quadruple helix, university-industry-government-civil society. After asking about each of quadruple helix actor roles, authors find that the role of civil society is considered important by the founders

toward the development of their business. Then, the question is shifting towards the role of civil society to deepen the understanding of the fourth role. The interview durations are varied from 30 minutes to 90 minutes.

The data gathered from interview was transcribed, examined, and characterized into several similar substances (Nag et al., 2007; Miles and Huberman, 1984). Pattern-matching technique is used for data analysis to compare the pattern that derive from data with the pattern proposed by the theory (Yin, 2009). It iteratively examines the coherence between data and the theory. In addition to interview, secondary data and observation provides a triangulation for the analysis.

Table 1 Profile of Cases

<i>Informants</i>	<i>No of Employee</i>	<i>No of community joined</i>	<i>Product/Services</i>
CEO of Company 1	5	2	Website Developer
CEO of Company 2	12	3	Digital product consultant
CEO of Company 3	50	5	Games

IV. FINDINGS

The analysis of this study will be focused on the roles of “media-based and culture-based” and civil society in IT industry development based on the motivation of startup founders when joining the business-based communities. Table 3 summarize the motivation of the cases to join community. These are the list of communities that informants join: Startup Bandung, a community for digital startup

that reside and build in Bandung; FOWAB, a community for Bandung website developer; BCCF (Bandung Creative City Forum), a community for solving Bandung problem in creative way, mostly the member are people who work in creative industry; Gamedev Indonesia and Gamedev Bandung, a community for game developer in Indonesia and Bandung; and HIPMI, an Indonesian association for young entrepreneurs. Table 2 shows the position of informants in the community.

Table 2 Cases Position in Community

<i>Informants</i>	<i>Startup Bandung</i>	<i>FOWAB</i>	<i>BCCF</i>	<i>Gamedev</i>	<i>HIPMI</i>
CEO of Company 1	Member	Member	-	-	-
CEO of Company 2	Tech Specialist	Community Leader	Tech Specialist	-	-
CEO of Company 3	Initiator Coordinator	Member	Member	Member	Chief of Media and Creative Industry

Table 3 Cases Motivation in Joining Business Community

<i>Informants</i>	<i>Startup Bandung</i>	<i>FOWAB</i>	<i>BCCF</i>	<i>Gamedev</i>	<i>HIPMI</i>
CEO of Company 1	• Networking • Project Sharing	• Networking • Project Sharing • Talents Scouting • Capacity Building	-	-	-
CEO of Company 2	• Networking • Project Sharing • Talents Scouting • Capacity Building	• Networking • Project Sharing • Product QA • Talents Scouting • Capacity Building	• Networking • Giving back to Society	-	-
CEO of Company 3	• Networking • Project Sharing • Capacity Building	• Networking	• Networking • Giving back to Society	• Networking • Product QA • Talents Scouting • Project Sharing • Capacity Building	• Networking • Giving back to Society

4.1 Project Sharing

Business-based communities accommodate the members of communities a place to share their project. The members can share their knowledge regarding their knowledge to other members. Sharing project knowledge is able to help other members who may have a similar project. It also helps in setting standard for other members when they want to accept the particular project. The standards it can set are the number of talents, the number of working hour, and the money value for the project.

Another form of project sharing is member can share the project with other members. If the members are lack of talents in finishing project, they can partner up with other members so this project become a joined project. When there is member who is offered a project he/she cannot accept, he/she can offer other members to accept the project. This sometimes happen when member did not have time

for doing this particular project or member did not have enough knowledge to take this project. So members of communities often give project to other members.

CEO of Company 1

“The communities give us spaces to share our project with other members, sometimes we have been offered a project that we cannot do, so we offer other members to take this project. So the project will be not taken by other people outside the community members. Sometimes we joined with other members for big project. [...] We like to sharing with other team about the project the details of working hour, talents, and project price so when we get the similar project we already have estimation.”

4.2 Talents Scouting

Business-based community is a place where people with the same interest and experience gathered. This

provide startup with the access to right talents for their business. The founders of startup join business-based communities to find the talent for their project or business because people who join communities are not only the founders of startup but also freelancer who work in the same industry. For freelancer this become the opportunity to get a job at startup. Founders also often hijack the worker from other startup to join their startup if they find that the worker is valuable for their business.

CEo of Company 3

“Game Dev Bandung communities helps me to find talent or even to hijack talent from other startup. There are a lot of people with the same interest and experience with us so it easier for us to find people to join our startup. Sometimes we find our co-founder in the community”

CEO of Company 2

“Joining community connects us with people that similar to us. When I first building this startup, I as personal join a lot of IT community to find talents and co-founder. I even find my investor from community.”

4.3 Product and Service Quality Assurance

Business-based community provides member with the access to expertise and to people with the same skill and interest. When member is creating a new product or service, they will test the product or service to the community member first before they launch it to the market. The creator does it to get a feedback from the member to improve the product or service. The other members of community become the first user of the new product. The knowledge the other members have about the product gave creator insight where to develop and improve the product, what are the strength and the weakness of the product. So the creator is able to make perfect their product before launching it to the market.

Company 3 whose products are games joins Gamedev community for their product quality assurance. Gamedev members will test Company 3 product and give feedback to them to improve their product.

CEO of Company 3

“The benefit for my business is quality assurance. So when we want to launch a new game, we tested our games in our circle of trust among Gamedev community. It will be better for us if we get a lot of feedback. They can provide us a blank spot we cannot see. We also share our experience in developing game, it gives us input when we want to develop our games.”

CEO of Company 2

“You know digital product needs user to operate it. We have our own trusted friends within the community to test the user interface or user experience for our product. They become our first user, the best thing is they have technical knowledge so their feedback really helps us a lot in developing our product. We are able to know and pay attention on how the user will use our product before we launch it to the market. With their insight and suggestion to our product, we can improve the user interface and experience.”

4.4 Capacity Building

Business-based community provides member with training and workshop to improve the capacity of the member. Each of community have programs that distinct them with other community. Startup Bandung have a startup workshop program called “Startup Talk” that is held regularly for the members to learn about doing startup. FOWAB workshop mostly are about website developer technical skill. BCCF have annually held festival for creative industry in Bandung and networking program to connect creative people in Bandung.

Members learn from this program as community exposes member to the expertise in the particular

area. Member can get new knowledge and skill, also they can get the feedback from expert so they can improve their business performance.

CEO of Company 2

“Most of the community have their own programs that will give member an advantage of joining community. In my early years of doing startup, I learn a lot of soft skill and hard skill from community. Hard skill I get it from the workshop and training as the part of community program. Soft skill I get it from conversing with people in community and the expert that community bring in to its program. This program also made for the member to meet up face to face because it is actually hard to meet the member face to face, so the program and workshop become a place and reason for member to gather. The program also a chance for me to meet the expert.”

4.5 Providing Access for Business Support through Networking

Business-based community give the members access to people they do not know before. It also gave them the opportunity to connect with the expert, investor, public figures, and government. Community exposes the member to the network of other members. The networking is important for startup so they can move faster with the help of the network. Network helps in supporting startup to develop, it helps startup in marketing their product or service and it also help startup in their daily operational activity. Company 3 being help by community networking for their legal, finance, and marketing. The community networking helps Company 3 to find the investor for their product, the legal authority for their intellectual capital right, and partner to open up booth in international events. Company 2 finds their investor through community networking. Company 1 find clients and project mostly from community.

CEO of Company 3

“My business is supported a lot by the community. I am able to market my products in foreign country because of the network in community. The community also helps me a lot in legal process of my startup. The people inside the community know the process and they shared the process and the connection that will fasten the process to me.”

CEO of Company 1

“Firstly, I joined community to find networking. I am able to find potential big clients and project partner through community.”

4.6 Giving Back to Society

Company 3 and Company 2 as startups which in creative industry are fully aware that they are belong to creative people. Indonesian people also have the paying-back culture to the society and group that have taken care of them. As creative people they want to give back to society by solving Bandung problem in creative way. Therefore, they join BCCF (Bandung Creative City Forum) where creative people gather and solve Bandung problem in creative way. Joining BCCF give them an opportunity to realize their ideals idea for Bandung. They mention that creative people sometimes have their own idealism for their own country and BCCF helps them to implement their idea in achieving their idealism in Bandung.

CEO of Company 2

“Well, I joined BCCF to make a realization of my idea for Bandung. I can contribute in solving Bandung problem using my creative idea. For me it is to accomplish my own idealism while giving back to society. I think if we can create an ideal society, it will support our development also, in personal and business.”

CEO of Company 3

“I feel challenged to solve Bandung problem and to be active and to be aware of the problem that our

city has. Bandung have supported me and my business to grow so joining BCCF will be my way to pay back the support that Bandung have given to me.”

V. CONCLUSION

In our study, we examine three founders of IT startup in Bandung to determine the roles of civil society in the development of IT business as the fourth element of quadruple helix model in Bandung, Indonesia. Two of the founders we interviewed are not only active in business-based community but also the initiator of the community. Therefore, they are able to give this research deeper understanding of the business community vision.

Our research results in the roles of civil society in the form of business-based communities towards IT business development. The roles of civil society are sharing project, finding talents, product and service quality assurances, building capacity, and a place for business to give back to society. This giving back to the society has been Indonesian culture as the collectivist society. It gives a new insight of civil society roles in Indonesia. The development of business-based community needs supports from local government and private institution so they can continue helping IT business to grow. Table 4 is the summary of each roles of civil society contribution towards It business development.

	<i>Project Sharing</i>	<i>Talents Scouting</i>	<i>Quality Assurance</i>	<i>Capacity Building</i>	<i>Business Support</i>	<i>Giving Back to Society</i>
<i>Contribution</i>	• Sharing knowledge • Project partnership • Project standardize • Project giving	• Worker scouting • Freelancer job hunting	• Product tester • Market tester • Product improvement • Product Feedback	• Business skill workshop • Technical skill training • Networking skill	• Marketing • Legal • Financing • Operational activity	• Solving society problem

Table 4 Contributions of Civil Society Roles to the IT business development

This research implication is to provide reference of civil society roles in IT business development especially in Bandung, Indonesia case. This research provides a new insight of civil society roles in collectivist society where the people have a sense of paying back for the society that have been taken care of them. For the practical implication this research provides insight for government and private institution in supporting business-based community to help local IT businesses in their development.

Our research has some limitations. First, it focuses on one regional area in Indonesia which is Bandung. The result cannot be generalized; a various regional area will enrich this research result. Second, this research only examines business in IT industry, further research must be conducted to find the roles of civil society in other industry.

Given the contributions and roles of business-based community in startup business development, we recommend Indonesian government in making program and policies related to startup development should not designed for the individual as mainly happen now in Indonesia. The program and policies should be designed for communities for the greater impact and controllable and efficient result. The program such as Kredit Usaha Rakyat (a financing program for micro, small, and medium size enterprise) that initially given to the individual businessman should be given to business-based community in order to make the rolling stock effect so the funds able to enlarge and sustainable. Then, we suggest startup to join business-based community for their business development.

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