DEVELOPING SERVICE ECOSYSTEM INNOVATION MODEL FOR DIGITAL CREATIVE INDUSTRY IN INDONESIA

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Abstract - The need of innovation is often associated with an uncertainty situation in business environment. Therefore, innovation strategies need to be aligned with the change in the business environment. But, unfortunately, many start-ups in the digital creative industry are lack in innovation. In this paper, we focused on collaboration as a solution to create service ecosystem innovation model in Indonesia. The aim of this paper is to develop service ecosystem innovation model for start-ups in the digital creative ecosystem by using value co-creation concept. This research use service science perspective as a major framework. Qualitative method using case study was used to collect data needed in this research. This research consists of four phases: problem identification, data collection, ecosystem model building, and analysis. To collect data and build the ecosystem model, we have conducted interview session with some key informants like government, digital start-ups, academia, and incubator. We use a hierarchical model of service ecosystem innovation to illustrate the adaptation and innovation in service ecosystem. To validate the model, wethen apply the model to a case study of digital start-ups in the transportation sector. This research is expected can give some theory contribution by giving advanced current thinking in developing and managing service ecosystems innovation in the digital creative industry in Indonesia, especially in Bandung.

Keywords - service ecosystem innovation, service science, value co-creation, digital creative industry.

I. INTRODUCTION

Research shows that digital industry has become one of fastest-growing economic sectors in the world in recent years (GMCA, 2016).This phenomenon may become a major reason for some companies in the creative industry to combine digital technology and creative industry, or now it is called as digital creative industry. They try to use digital technology to improve core functions of their business (Luzi and Colombani, 2014). Technology is perceived plays an important role in the growth of digital creative industry (Sneha, 2016) to enhance the growth of company's labor and productivity (Das et al., 2016).

The digital creative industry, which combines information, digital technology and creative element in it, has grown in Indonesia the recent years (Das et al., 2016). In the future, the digital creative industry is predicted will continue to grow, along with the increasing of digital

technology (PWC, 2015). Since the creative industry can increase the economic growth (Luzi and Colombani, 2014), Das et al. (2017) in the McKinsey & Company Report said that there is a great opportunity for digital creative industry in Indonesia to give contribution to the increasing number of Indonesian GDP until more than 100 billion US Dollar in 2020. This prediction may be supported by the data obtained from the Indonesian Central Statistics Agency about Creative Economy (EKRAF) that shows creative economy (EKRAF) Gross Domestic Product (GDP) growth reached 7.05% in 2016. This number is predicted will getting higher in the next years.

Discussion on the digital creative industry will be closely related with a service ecosystem. Service ecosystem is a complex system of service system (Goda and Kijima, 2015), where that service system form an interconnected network in the value co-creation process. Service system is a symmetric resource integrator and through their interaction will exchange service value one another. Their role in networks is changing from provider become customer and from consumer become provider, while some other service systems act as network coordinator. Through this service exchange, service system network will be restructured and updated again in three phases can be modelled as a cycle or rotation (Vargo, 2014, Vargo et.al, 2015). In this paper, we use the value co-creation model which consists of three phases: networking, resource integration, and service exchange. Collaboration as the key point then will become the major solution to create service ecosystem innovation in the digital creative industry.

In Indonesia, there are many actors play in the digital creative sector produce a wide range of products, ranging from transportation services, directory a point of interest, and e-commerce. It can be a good opportunity and challenge to enhance the business performance of the digital creative industry. So, it is important to study the statistical dynamics mapping, positioning, development potential and service ecosystem in Indonesia to help digital creative industry have a better performance. It is due to there are limited papers discussed about the digital creative industry in the world, especially in Indonesia. Through this research, we can give some theory contribution for the development of the digital creative industry.

Based on the background above, in this research, we try to (1) analyze the stakeholders involved in the digital creative industry in Bandung, (2) build service ecosystem innovation model of digital creative industry in Bandung, and then (3) analyze the role of

collaboration in creating the service ecosystem innovation.

II. THEORETICAL BACKGROUND

This research is undertaken in some literature and construct of service science and service ecosystem innovation. The problem in this study is mapped and analysed using service science framework.

A. Digital Creative Industry

Creative industry is defined as the economic activities product of industry is generated by creativity (Howkins, 2013). Based on the DCMS (2001) report, there are nine classified creative sectors: (1) Advertising and marketing, (2) Architecture, (3) Crafts, (4) Design: product, graphic and fashion, (5) Film, TV, video, radio and photography, (6), IT, software and computer services, (7) Publishing, (8) Museums, galleries and libraries and (9) Music, performing and visual arts. Then, according to BEKRAF, in Indonesia, the digital creative industry is divided into six sectors: Games, Education, Music, Animation, Software and Social Media.

B. Value Co-Creation Cycle

Value co-creation is an underlying construct that captures the evolution of organizational entities towards the development of a higher relational orientation and deeper interaction with their customers (Ballantyne & Varey, 2006). The shift in the locus of value creation from simple exchange ('goods-dominant logic') to use and context of usage means that value cannot be circumscribed to the consumption of units of output anymore, but seen as a process of interacting in ways to produce a holistic experience (Payne et al., 2008; Vargo et al., 2008). Value-in-use may be created prior, during and after the purchase (Heinonen et al., 2010). Hence, "value resides not in the object of consumption, but in the experience of consumption" (Frow & Payne, 2007). Helkkula et al. (2012, p. 59) conceptualize "value in the experience" as individual service customers' lived experiences of value that extend beyond the current context of service use to also include the past and future experiences and service customers' "broader life contexts" (see also Heinonen et al., 2010).

Co-creation explains the process of how resource integrated which occurs during practices between actors linked together within a service ecosystem. According to Vargo (2014), value co-creation model is divided into 3 phases, which are networking, resource integration, and service exchange. Network is used to interconnect in the value co-creation process. Service is a symmetrical resource integration system, and through their interaction, the service value will be exchanged each other. Their role in the network is changing from providers become a customer and / from the consumer into provider, while some other services system can play a role as coordinator of the network. Through the service exchange, the service system's network will be restructured and updated again in three phases can be modelled as a cycle or rotation as shown in Fig. 1 above.

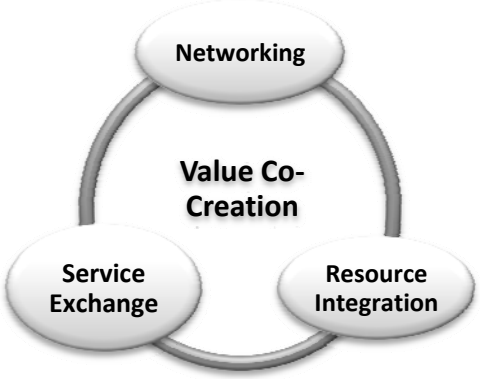

Fig. 1 Value Co-Creation Model
Source: Vargo, 2014

C. Service Ecosystem Innovation

Many researchers have conducted studies about the concepts of business networks and service co-creation, leading to the development of the concept of service ecosystems. A service ecosystem can be defined as "a (dynamic) set of organizations that provide and consume service offerings, relying on the capabilities and resources of the network participants" (Barros and Dumas, 2006; Riedl *et al.*, 2009; Kohlborn *et al.*, 2009; Konstadinusi et al, 2014)

By adapting value co-creation model by Vargo (2014), we can argue thatto co-create value, actors need to make interaction among each other in the ecosystem. Through this interaction, actors can create a new form of value that can be called as innovation. In other words, innovation in service ecosystems focused on actions, interactions, and institutions as the underlying drivers of innovation (Vargo et al., 2016). Through this concept, innovation can be defined as "a collaborative process by involving the value co-creators and social, as well as technical developments" (Vargo et al., 2015).

Goda and Kijima (2015) have argued that in service ecosystem innovation, there is an adaptive cycle in the service ecosystem caused by the dynamic change of ecosystem. The adaptive cycle of ecosystem is needed to create stability and change in the ecosystem. Adaptive cycle model is modeled as a revolution system, analogous to the Solar system (Goda and Kijima, 2015). This model consists of four phases: the first phase is how to attract the market (exploitation) and became popular (conservation), in which the popularity depends on various factors. Over time, the popularity would fade (release), and finally, the product/service digital will be updated again be more in line with the market (reorganization/reinvention) and ready to enter the next round.

In the adaptive cycle, there is a phase called as transition phase where the rotation system at the release stage of the adaptive cycle jumps to a new conservation stage (Kijima, 2015). The figure above

shows the transition phase of adaptive service ecosystem.

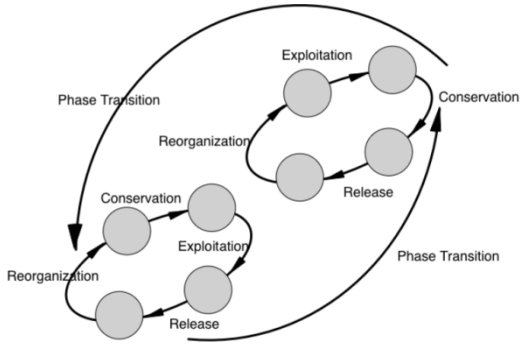

Fig. 2 Transition Phase
Source: Kijima, 2015

III. METHODOLOGY

A. Research Method

Interpretivism paradigm was used in this research. We realized that in a social science world, we cannot alienate the subject from the object, people as a researcher and people as main objects are situated in terms of the individual and the event, and each of participant will offers their own specific opinions and views of the world. Therefore, we need to dig deeper about the issues happened in the real world. To fulfill this aim, we use qualitative methodto enables us to dig deeper into the subject and find new factors that has not been identified on the literature review.

B. Case Selection

In this research, we used case study method. Robert K. Yin (2014) defines the case study method as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984, p. 23)". This method was used to make in depth study. In this study, we choose a case study of digital creative industry in Bandung. We want to more focus on the digital creative ecosystem in Bandung. It is because nowadays there are so many start-ups in the digital creative industry in Bandung, but there are limited papers discussed about digital start-ups or digital creative industry in the world, especially in Indonesia. It may be become the major reason for us to choose digital creative industry as a case study for this research.

C. Research Design

The first stage of this research is identifying the problem related to the digital creative industry. This research will use some literature review to support the result and analysis. To understand the interactions among stakeholders, the next stage will be done to build ecosystem model. To collect data about ecosystem model, we conducted semi-structure interviews by relying on general interview protocol as a guide. Then the interviewers may address other aspects and give opportunities to the participants' to say things that lie outside of the interview guides and the interviewer could probe deeper into areas of interest (Carpenter and Lertpratchya, 2016, p. 452).

The respondents were chosen based on purposive sampling method. We just choose respondents who are involved in the digital creative ecosystem in Bandung. There are some respondents for this paper, which aregovernment (as a policy maker for digital creative industry in Indonesia), start-ups in the digital creative industry in Bandung, andacademia/university (as researcher and business incubator).There are three data need to be collected from the interview, which are: data about stakeholders involved in the ecosystem, model of digital creative industry ecosystem, and the role of innovation in increasing the development of digital creative industry in Bandung. The interview process was about 30 minutes – 1 hour per person. The interview was conducted using one-to-one interview to dig deeper information from the informants.

The interview process was conducted using Bahasa Indonesia, in order to grasp the whole concept and avoid miscommunication between interviewer and interviewees. Authors of this study gathered the data primarily through direct interview to the selected participants. The written interview notes based on audio transcripts were then analyzed and coded in English language. We conducted open coding of the audio transcripts to identify themes and sub-themes. Following the identification of key issues, the process evolved into more systematic codes in order to develop more concepts. The transcript then will be analyzed to identify emerging patterns and thematic codes.

Then, to analyze the data, we will service science as a major framework. We will adopt the model of service system as a revolution. The model that we build in the previous stage will be validated. The model needs to be validated to ensure that it represents the real world.

IV. ANALYSYS

In this paper, we found that there are some actors involved in the service ecosystem of digital creative industry in Bandung. Those actors are digital startups, academia (universities), government (in this case in the Ministry of Tourism and Creative Economy and local government), industry (digital creative industry), business incubators, and consumers. They make interaction in the ecosystem to create a new value. They make a service exchange to fulfill their purpose. The figure above shows the service ecosystem of digital creative industry in Indonesia.

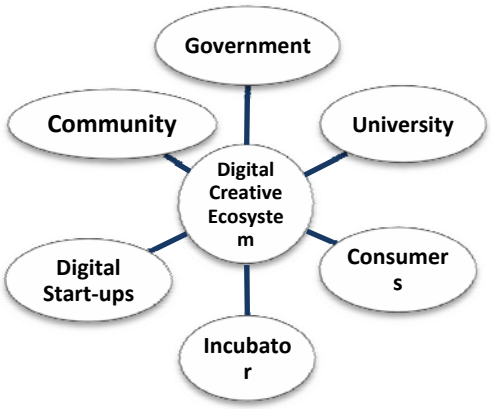

Fig.3 Digital Creative Industry Ecosystem

According to the picture above, each actor has a different role in the ecosystem. University has a role as a researcher that helps start-ups in developing their idea or product. Then, the government has a role as policy maker related to the digital creative industry in Indonesia. For example, Indonesia's government create an agency called Creative Economy Agency (BEKRAF) to assist the President in formulating, assign, coordinate and synchronize policies in creative economy in Indonesia. While business incubator has a role in helping start-ups in developing their business such as give funds for start-ups and help in increasing the skill of human resource in start-ups. University then can be a start-ups partner to have co-research to develop digital creative products. Customers have a role in giving their insight about their preferred products. While, community has a role in helping the start-ups by creating some events related to the digital creative products to promote their product.

From the explanation above, we can conclude that each stakeholder has their own role that can help startups in developing their business. Therefore, collaboration and innovation in the service ecosystem is needed to increasing the number of digital start-ups in Indonesia and to make their business mode establish and sustain for the long-term.

In the next section, we will discuss about the example of digital startups that have success in developing their business by creating some innovation and collaboration.

A. Hierarchical Model of Service Ecosystem Innovation: Digital Start-ups in Transportation Case

In this paper, we try to illustrate more clearly the model of service ecosystem innovation for the digital creative industry in Bandung. In this study, we use a case study of digital startups in the transportation sector. In Indonesia, there is a significant innovation in the digital ecosystem. Before the existence of app-based transportation, Indonesian just uses other public transportation like train, taxi, bus, *Ojek*, and other public transportation. But, since 2013, Indonesia's small businesses in digital transportation are significantly outperforming.

Indonesia has seen the birth of home-grown sharing platforms such as GoJek, UBER, GrabBike and Ojek Syar'i. Those companies are startups that provide a platform for motorbike ride sharing. They are digital startups in application-based transportation. GoJek, UBER and other digital-based transportation are a form of service innovation regarding the provision of public transport. Traffic jam and inefficiency of conventional transportation have become an opportunity for those startups to make an innovation by creating an application-based system that aims to increase the service value. They use collaboration concept to create value in the digital ecosystem. The development of app-based transportation startups can be a second generation of transportation in Indonesia after the conventional transportation.

In this paper, we adapt the hierarchical model of service ecosystem innovation conducted by Goda and Kijima (2015). The model divided into three levels (micro, meso, and macro level) in society and is concerned with interaction between them. In this study, we try to illustrate the service ecosystem innovation model of digital startups in transportation in Indonesia. Here is the hierarchical model of digital startups in transportation.

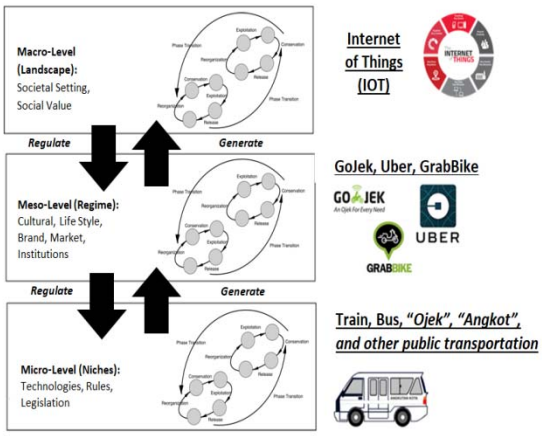

Fig. 4 Hierarchical Model of Service Ecosystem Model for Startups Digital in Indonesia

Broadband cloud technologies at the micro-level generate a new market and industry, brands, culture of audio-video entertainment service and life style based on non-ownership at the meso level. At the same time the new culture or life style, in return, regulates the conventional transportation at the micro level through phenomena of digitalization. Furthermore, culture and market at the meso level generate such new brand, market and lifestyle.

If we analyze this hierarchical model, the phenomenon was started at the micro level. It can be caused by the change of technology, rules, or legislation. In this case, since technology has been growth in the recent years, people faced the technology as an opportunity to reach niches market. People think that technology can

increase service quality in public transportation. People may found some issues from current public transportation. Based on the observation result, those gaps are: comfort, waiting time, traveling time, cleanliness, and accessibility. Technology then becomes a solution that can help them to solve those issues.

Today, many Indonesian people start to change their life style by using app-based digital transportation instead of conventional one to make them easier in accessing the transportation.It can be a reason the existence of many new startup brands that make app-based transportation such as GoJek, UBER, GrabBike and other brands. People may think that technology make them easier in using transportation. They just need to use their smartphone to order their transportation mode. In addition, e-payment makes the payment become easier so that the passengers did not have to use cash. This phenomenon then becomes a great opportunity for the digital start-ups in creating the apps. They realize that the market share for that product will increase in the future. This phenomenon is related to the trend in macro level that everything is connected by the Internet (Internet of Thing/IOT). Today, everyday life based on IOT by using the Internet to fulfill people needs.

B. The Role of Collaboration in Enhancing Service Ecosystem Innovation

To develop an ideal service ecosystem innovation model, collaboration can be a good solution for each stakeholder. By using collaboration concept, each stakeholder can share their resource and can make beneficial networking with other stakeholders. Technology then can help the stakeholders to communicate and coordinate each other. For example, in the case of digital start-ups in Transportation above, the start-up actually use the concept of collaboration in making mutual benefit relationship.

Go-Jek, Uber, GrabBike is just a platform that facilitates stakeholders in doing service exchange. In the case of Go-Jek, the start-ups owner helps people who have motorcycle to get revenue by giving transportation service to the customer. Then, the customer also can help the owner by giving some feedbacks about the service so they can involve in co-creating the value (in terms of service quality improvement). Another stakeholders involve in Go-Jek is restaurants, massage providers, department store, etc. Go-Jek help the customers to get some foods or other service so it can be a source of revenue for restaurant's owner or other service owners. In addition, Go-Jek also collaborates with some banks in Indonesia to make some innovation in payment system by providing e-payment (Go-Pay). Each stakeholder then will get benefit by collaborate in the ecosystem.

Based on the Go-Jek case study above, it is clear that in making some innovation we need other parties to help us. Collaboration has important role in enhancing innovation in the digital creative ecosystem. Collaboration can help each stakeholder in making some innovation in the ecosystem.

CONCLUSION

Service ecosystem in the digital creative industry may be different with service ecosystem of other industries. In digital service ecosystem, there are some stakeholders involved like government, university, industry, customer, incubator, community, and customers. Each stakeholder/actor makes some interaction in the ecosystem to co-create value. They even can make innovation (new form of value) in the ecosystem by exchange service among them. They use interactions and institutions as the underlying drivers of innovation.

There are three levels of service innovation ecosystem used in this study which are micro, meso and macro level in society. In each level in the digital service ecosystem usually takes a dynamical and adaptive behavior. So, in this study we used transition phase to illustrate the change. The result shows that in digital service ecosystem in Indonesia, especially in app-based transportation startups ecosystem, there is a value shifting from the micro level until macro level. In the meso level, people are changing to use app-based transportation instead of the conventional one. It can be influenced by the trend in macro level about Internet of Thing, which are many people more prefer to use internet to help them in fulfilling their needs.

To reach each level of hierarchical model, collaboration is perceived as a solution to help the stakeholders in enhancing the service ecosystem innovation. So it is important for people to collaborate with others to build service ecosystem innovation.

The limitation from this research is this research just used case study of digital startups in the transportation sector. For future research, the researcher can use another case study. Then, for the future research, the researcher can use other model to analyze the service ecosystem innovation, maybe not just hierarchical model, but combine it with other model.

The result of this result is expected can give some insight for the startups about the importance of creating some innovation in the digital ecosystem. This study also is expected can give some theory contribution for the researcher that has an interest to conduct a study about service ecosystem innovation and value co-creation.

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