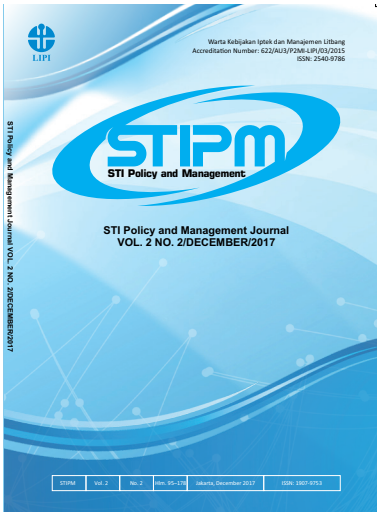

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Management of Indonesia ICT Business Incubators: Administrators' Compared to Tenants' Perspecive

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JOURNAL OF SCIENCE, TECHNOLOGY AND INNOVATION POLICY AND MANAGEMENT (STIPM JOURNAL), Volume 02, Number 02, December 2017

FOREWORD by EDITOR-in-CHIEF

We are pleased to present the STIPM Journal Vol. 2, No. 2, December, 2017. This issue brings together research findings on the adoption of science, technology, and innovation policy and management from Thailand, Malaysia, and Indonesia. This issue also presents a theoritical review on the determinants of enterpreneurial success.

In the original articles of this issue, **Poolsak Koseeyaporn et al.** presented the Talent Mobility Programme in Thailand. It is a new programme for making relationship between the researchers, who are mostly working at Public R&D institutions and universities/higher education institutions, and companies. This programme is supporting the researchers to connect, meet, and explore the possibility of having research topics that fulfill both interests of researchers and the companies. The researchers would have a chance to be exposed to the industry's research problems as well as to obtain a level of trust from the companies.

Wati Hermawati and Ishelina Rosaira present the result of an exploratory study on the factors contributing to the sustainability of renewable energy projects in the rural areas. It was indicated that the success of energy technology implementation lays not only in good technology performance and long-term maintenance, but was also highly dependent on six key factors, namely (1) project planning and development; (2) community participation; (3) active communication and beneficiaries; (4) technology maintenance, including workshop and technician availability; (5) project management and institutionalisation; and (6) local government support and networks. The findings from this study provide useful insights to all stakeholders involved in the implementation of renewable energy technology for the rural areas in Indonesia.

Thiruchelvam presents a brief overview on Malaysia's STI achievements, salient features of the nation's national innovation system (NIS), and the key challenges of its NIS. The central theme of the paper is that success in STI is not automatic. It must be made through effective policies in promoting innovation as well as innovations in policy-making itself. Without such commitment for these two sides of innovation policy-making, pouring more resources to the development of STI will be futile.

Ria Hadiyati, et al., discussed the innovation capacity-building in the health sector in Indonesia. Current initiatives to enhance innovation capacity exists by intensifying R&D consortia in life science, especially vaccine and stem cell. The research capacity in the area of vaccines has been long started from individual research conducted by researchers. It has been continued into research organisations, and then developed into building innovation capacity through R&D consortia. In areas of stem cell, there is still lack of evidence however, efforts have been made to build innovation capacity through R&D consortia.

Emyana Ruth and Faiq Wildana compare the management of Indonesian ICT Business Incubators from the perspective of administrators and tenants. The incubation administrators emphasise the

importance of aspects of skill development, synergy, and seed capital. Meanwhile, from the tenants' perspective, skill development services are considered quite satisfying, either in government, private, or university-owned business incubators. However, emphasising on skill development aspect might lead incubators to provide oversized portion on training activities and susceptible to be trapped as a training institute.

Dyan Vidyatmoko and Pudji Hastuti propose a theoretical framework as a result of the development of theoretical framework, proposed by Kiggundu as well as Lussier and Halabi. The proposed framework is to examine factors affecting the success of entrepreneurship development in Indonesia. Three factors are discussed simultaneously, namely the entrepreneurs, the entrepreneurial firms, and the external environment. Success is represented by three indicators consisting of employment growth, profitability, and survival. Compared to both models, the proposed approach is expected to provide a comprehensive analysis of the factors affecting the success of entrepreneurship development in Indonesia. The results of the study is relevant and useful, both from the academic and practical points of view. It also has practical contribution for policy makers in terms of conceptualising and operationalising appropriate factors for the success of entrepreneurship in Indonesia.

After indexing by Google Scholar, ISJD, and IPI, STIPM Journal is now indexed with DOAJ, BASE, and OCLC World Cat. This has made the journal dissemination wider. We would like to thank all the reviewers for their excellent work and the authors who have kindly contributed their papers for this issue. We are also indebted to the STIPM Journal editorial office at Pappiptek LIPI and the publishing and production teams at LIPI Press for their assistance in the preparation and publication of this issue.

We expect that STIPM will always provide the highest scientific platform for the authors and the readers, with a comprehensive overview on the most recent STI Policy and Management issues at the national, regional, dan international levels.

Jakarta, December 2017

Editor-In-Chief

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Management of Indonesian ICT Business Incubators: Administrators' Compared to Tenants' Perspective

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ABSTRACT

Business incubation is one of entrepreneurship development methods believed to have advantages compared with other SME development patterns. The model used in managing business incubators is influenced by the business focus of the participants/ tenants. In managing the Information, Communication Technology (ICT) business incubators, there are some slightly different key factors from the management of other types of incubators. However, the legal rules and standards for organising various types of incubators remain unchanged. Therefore, it is of concern that there will be some misunderstandings or misleading information from the managers or administrators in providing their services, so that the process to reach its main objectives would fail. This study surveyed administrators of ICT incubators to get their perspectives about the dominant aspects among 8-S mandatory services by using Analytical Hierarchy Process, as well as some tenants about their satisfaction about the incubator services. The result is then reviewed based on ICT products and business characteristics.

INTRODUCTION

Incubation is one of the entrepreneurship development approaches which is considered more effective and has been widely used by many countries in the world as a strategy of economic development through the growth of micro, small and medium enterprises (MSMEs) (Hasbullah, Surahman, Yani, Almada, & Faizaty, 2013). Business incubation is believed to have advantages when compared with other SME development patterns. The chances of SMEs success is over 50% compared to those without incubation, which is below 10% (Purwadaria, 2007). Incubation activities are carried out in the institution called business incubators, but the shapes and names of such entrepreneurial intermediary institutions are quite varied. Apart from incubators, there are also accelerators, innovation centres, and science-techno parks (STPs), each with its own characteristics.

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The success of a business incubator is determined by environmental ecosystems in the incubation activities. The concept of Triple Helix is an empowering synergy between academia, business, and government determining the condition of the ecosystem. The academics with the resources, knowledge, and technology are focusing on generating applicable innovations. The business community is to capitalise and offers economic advantages and benefits to society, while the government provides guarantee and maintains the stability of their relationship with conducive regulatory (Etzkowitz & Leydesdorff, 2000 in the Ministry of Research, Technology and Higher Education, 2015).

The number of business incubators in Indonesia is still low. Data from Bank Indonesia (2006) stated that there were around 25 incubators, with an average of 2,000 m^2 of areas, and an average 20 tenant participants. The number continued to grow and reached as many as 81 incubators in 2015, as stated by the Coordinating Ministry of Economic Affairs (2015). Among those numbers, incubators which were under the auspices of the campus were more numerous: 35 (43%) incubators established through the Public Education Institutions, and 24 (29%) incubators are under the Private Education Institutions. This was possible because technology is closer to academia. Meanwhile, the remaining amounts of incubators belonged to the private sector, public sector and public company, each having 12 incubators (15%), 7 incubators (9%), and 3 incubators (4%), respectively.

Within the last 5 years, the number of entrepreneurial incubators has increased significantly. This is in line with the policy of the President that has launched the development of 100 units of Science Parks (SPs) and Science-Techno Parks (STPs) spreading all over Indonesia, in which the development of those SP/STP will be accompanied by the development of entrepreneurship incubators. Moreover, it is also supported by the Government's National Movement of Developing 1,000 Digital Startups—although developing digital startups does not necessarily need to go through the business incubator—as well as the funding programs for business incubators, such as the Technology Business Incubator program of the Ministry of Research and Technology and Higher Education. However, when compared with other countries, the number of business incubators and its growth in Indonesia is still left far behind. In 2006, the EU had 1,100 business incubators with an average of 25 tenants per incubator, while China had 450, with an average of 36 tenants per business incubator.

Business incubator itself can be distinguished by the focused areas of its tenants; there are incubator for business in information and communication technology (ICT), agricultural, incubators crafting, and more. So far, the most targeted economic sectors for business incubator, respectively, are the small industry and handicrafts (62%), services (19%), agricultural (13%), and trade (6%) (Bank Indonesia, 2006). ICT business incubator is still limited in number since it has just begun to develop in around 2012. From the 19 incubators identified in a formative stage or small to medium in size, nine of them are focused on IT sector (Coordinating Ministry of Economic Affairs, 2015).

In managing a business incubator, participants' or tenants' focal business also influence the incubation models applied (Bank Indonesia, 2006). Accordingly, in the management of ICT business incubators, there are key factors and treatments, which are slightly different from the management of food business incubator. The scope of management here refers to all incubation services and process given by the incubator to its tenants. However, the legal rules and standards for managing various types of incubators remain unchanged. It is feared that there will be misunderstandings or misleading information from the ICT incubator administrators in providing their services, which in turn will fail in reaching their main objectives. Therefore, this study focuses on seeing the important aspects required in incubating ICT business. Among the broad coverage of ICT sector, the ICT business which commonly go to incubators are those having problems with issues related to digital content as well as hardware and software development.

The awareness of different treatment ICT business incubator has been discussed in many countries. It is recognised that key factors for successful technology incubators should be based

on emphirical study (Nunberger, 2010). Further, Kidane (2012) through his presentation paper from Global Science and Technology Forum (GSTF) about ICT incubation compared a generic incubation model to worldwide best practices, such as Silicon Valley in US or its equivalence in India and China. Most incubators in Silicon Valley believe that seed money and mentorship are crucial for the success of small startups. Incubations in India emphasise on technology institutions partnership with government and financial institutions, while in China they look for broader model beyond startup and focus on scalable businesses, rapid growth, and impactful ones (Kidane, 2012).

From the previous explaination, the main problem stated in this research is "what are the perspectives of both administrators and tenants about ICT business incubators services?" Replies to the questionnaires by the administrators analysed with Analytical Hierarchy Process method, reveal that there are 8 dominant factors among the mandatory services of an incubator, while questionnaires filled by the tenants express their satisfaction to incubators' services. By comparing the perspective of administrators and tenants, we might see the gap between them. The administrators probably has obeyed the regulation to run a business incubator, but their supervision does not directly answer the tenant's needs. With reference to Customer Development Model (Blank, 2006) regarding startup (ICT business) characteristics, the strategic role of ICT business incubator is found in the process of searching, involving the customer discovery and customer validation process. This role has yet to properly delivers mandatory services of an Indonesian incubator, either skill development or synergy or seed capital services. However, deeper research with more samples of ICT incubators and tenants in the future can result in a more valid result.

II. ANALYTICAL FRAMEWORK

This chapter describes policies and regulations of business incubators in Indonesia since its existence, as well as what the paper looks and defines as new additional aspects of criteria. It also shows previous relevant researches, only in the last 10 years because studies regarding business incubators scope in Indonesia were limited. Different countries most likely have different ways of developing and managing their SME tenants. This fact corresponds to the culture, human, geographical location, and natural resources in each locality.

A. Management of Business Incubators in Indonesia

The management of business incubators in Indonesia refers to the legal basis of Presidential Regulation Number 27 Year 2013 on the Development of Entrepreneurial Incubator. Article 1, Paragraph 1 of the regulation stated that "entrepreneurial incubator is an intermediary institution that conducts the process of incubation to the incubation participants (tenants)". Incubation participants are the beginner technology-based entrepreneurs (0–3 years) who underwent incubation process; the term for them is diverse, some use the term 'tenant', 'client incubator', or 'incubatee'. Meanwhile, incubation activity is "a process of coaching, mentoring, and developing, given by the incubator to its participants (tenants)" (Article 1, Paragraph 2).

The administration procedures of an entrepreneurial incubator is further stipulated in the Regulation of the Minister of Cooperatives and Micro, Small and Medium Enterprises No. 24 / Per/M.KUKM/IX/2015 on Norms, Standards, Procedures, and Criteria (NSPK) of the Management of Entrepreneurial Incubator, which stated that: a) registration of entrepreneurial incubator by the government; b) registration of entrepreneurial incubator by the local government, corporate and/or community to the regional working unit which is in charged for cooperatives and micro, small and medium enterprises. Furthermore, Article 5 of the regulation specified that an entrepreneurial incubator must meet the following standards:

1) Has a license;
2) Has professional human resources;
3) Has adequate facilities and infrastructure; and
4) Has legitimate source of funding.

Unfortunately, the regulation has yet to define it straightforwardly regarding the intended

standard of professional human resources and adequate facilities and infrastructure. For example it is not specified the required number of administrators should be met, or whether there is a necessity to have full time workers.

During the incubation period, an entrepreneurial incubator will facilitate and provide services to the tenants covering aspects of 7-S. This requirement refers to Establishment and Management Guidance of Business Incubator from Ministry of Cooperatives and Micro, Small and Medium Enterprises (2012), and is also stated in Article 5 of Presidential Regulation Number 27 Year 2013. The 7-S includes:

1) The provision of space (Space);
2) Support office facilities (Shared);
3) Guidance and consultation (Support);
4) Support research and development efforts as well as access to the use of technology (Service);
5) Training and skills development (Skill development);
6) Access to funding (Seed capital);
7) Creating business networks and cooperation (Synergy).

In this study, in addition to the 7-S above, another important 'S' aspect is added, namely *Sumber Daya Manusia* (*SDM/*Human Resources)—the term is used to easily called all the aspects as 8-S. Previous studies have revealed that the factor of administrator who runs the process becomes one of determining aspects for the sustainability of business incubators (Hariandja & Marihot, 2002).

The expected target of an entrepreneurial incubator as mentioned in Article 18 of KUKM Regulation is to foster young and independent entrepreneurs, to improve their productivity, and to create new jobs. However, it seems there are yet scalable/measureable indicators of success for the entrepreneurial incubators, so that the evaluation of the implementation could be made easier. On the other hand, indicators of success for tenants as mentioned in Article 18 are: a) able to produce standard products; b) able to access capital sources independently; and c) able to build marketing network.

To further enhance the existence of institution's incubators, the role of local government is reinforced by setting a target number of incubators in each province, district/city. In Article 16 of KUKM Regulation, it is targeted that in each province/special region there are at least five business incubators, while in each district/city there is at least one incubator.

B. The Art of Study

Several studies linked to business incubator in Indonesia have been done before. A research by Hasbulah et al. (2013) has set to find the ideal model for mentoring SMEs in food sector, that hopefully effective and sustainable to be implemented by business incubator in universities. The analysis showed that the most effective incubation model developed for food SMEs is participatory mentoring model, taking into account the characteristics of the food business, such as the nature of its market which is broad but highly competitive, and the nature of the product which is generally perishable. The characteristics of ICT business is different from food, in which the products can be hardware (tangible) or software (intangible), and have to be applicable, innovative, and problem solving.

Studies of Bank Indonesia (2006) has revealed that in the management of the incubator, there are some operational aspects affecting incubation models applied; one of them is criteria of tenant. The criteria here are regarding business prospects that will be developed and prioritised. The study has also searched for best practices through benchmarking in other countries and provided recommendations on the ideal implementation of business incubator. However, the difference of management model based on the tenants' business focus has not been discussed.

Research conducted by Ministry of Research, Technology and Higher Education (2015) about the model of business incubation in technology-based startup companies has seen the difference between the model of business incubation in focus areas of IT and non-IT. Mentoring model of ICT business incubator generally consists of five phases, namely pre-incubation, selection, boot camp, incubation (with a period of 6–12

months), and post-incubation (Figure 1). For non-IT business incubator, the mentoring model usually consists of only four stages: technology identification from previous research, pre-incubation, incubation (with period of 2–3 years), and post-incubation.

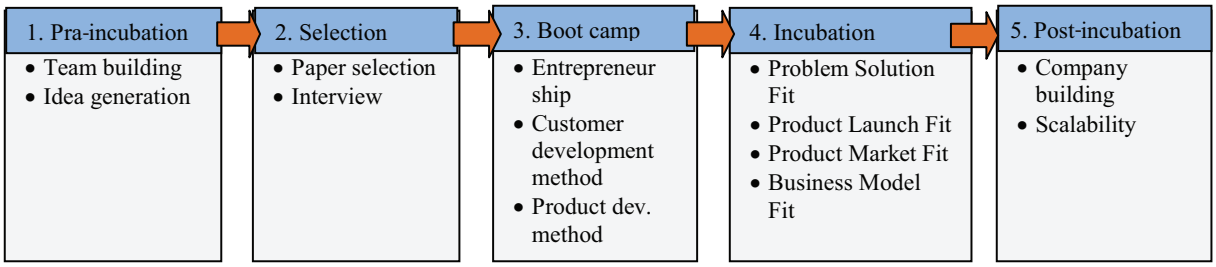
Moreover, the result also mentioned that the model of business incubation focused in IT is more established in the private sectors than that in universities. The contrary applies for non-IT business incubation, which is more settled in universities, R&D institutions, and private businesses which are oriented in product development and universities' research products innovation.

The study also revealed that the success of ICT business incubation model is determined by appropriate and conducive ecosystem of the incubation program, but have not touched on the key factors that must be considered. Therefore, this study will complement previous studies which specified the management of the ICT business incubator.

III. METHODOLOGY

This study used qualitative and quantitative approaches. Quantitative data were collected from questionnaires filled by the administrators from nine samples of ICT business incubators. Also, another set of questionnaires were filled by tenant representatives in each incubator, while the qualitative data were obtained from focus group discussion with relevant stakeholders. From the questionnaire, the researchers obtained the perspective of administrators regarding the most dominant factors among 8 mandatory services provided by incubator (8-S), and the perspective of tenants about their level of satisfaction to those 8-S services. The findings then discussed with representatives from the Association of Indonesia Business Incubators (AIBI), incubator administrators, tenants, and start-up founders that has developed without business incubators. In addition to the primary data, the study was also supported by secondary data obtained through literary study.

Processing and data analysis were conducted with Analytical Hierarchy Process (AHP), which can be used in decision-making process (Saaty, 1980) and in determining the priority order based on created hierarchy (Forman, 2001). This research sets the hierarchy of 8-S factors: Space, Shared, Services, Support, Skill development, Seed capital, Synergy, and SDM. The AHP instrument and assessment scale are shown in Figure 2 and Table 1.



Source: Ministry of Research, Technology and Higher Education (2015)

Figure 1. ICT Business Incubation Model

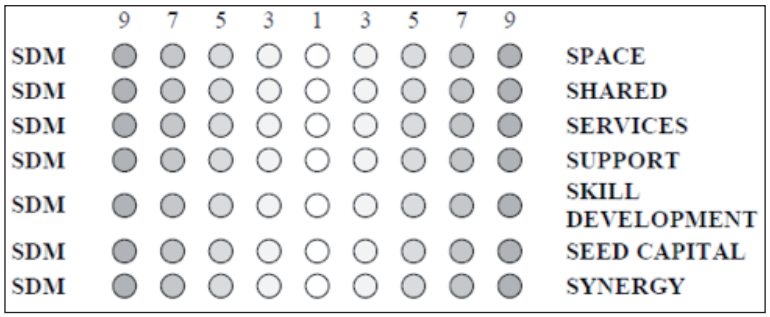


Figure 2. Research Instrument with AHP

Table 1.
Scale of Paired Comparison Values

Values	Definition	Explanation
1	Equal Importance	Two activities give same contribution to objective
3	Moderate Importance	Experience and appraisal give close different value between one activity to others
5	Strong Importance	Experience and appraisal give strong different value between one activity to others
7	Very strong Importance	An activity is more preferable than other activities
9	Extreme Importance	An Activity certainly placed the highest order in preference
2,4,6,8	Compromise values to previous values	Compromise appraisal numerically needed when no precise expression to preference

Source: Saaty (1980)

Table 2.
Random Index Values (RI)

n	1	2	3	4	5	6	7	8	9	10	11	12	13
RI	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.48	1.56

Source: Saaty (1980)

Table 3.
Lists of ICT Business Incubators as Respondents

Incubators	Owner	Location
Inkubator Industri Telematika Bandung (I2TB)	Government (MCIT)	Bandung
Regional Information technology Center of Excellence (RICE) INTI	Government (Ministry of Industry in cooperation with PT. INTI)	Bandung
Inkubator Industri Telematika Yogyakarta (I2TY)	Government (MCIT in cooperation with STMIK AMIKOM)	Yogyakarta
Lembaga Pengembangan Inovasi dan Kewirausahaan (LPIK) ITB	University (ITB)	Bandung
Bina Nusantara (Binus) Incubator	University (Binus)	Jakarta
Inkubator Direktorat Pengembangan Usaha dan Inkubasi (Dit PUI) UGM	University (UGM)	Yogyakarta
Bandung Digital Valley (BDV)	Private Sector (Telkom Group)	Bandung
Global Enterpreneurship Program Indonesia (GEPI)	Private Sector (Ciputra)	Jakarta
Ideabox	Private Sector (Indosat in partnership with Mountain Partners AG from Swiss)	Jakarta

Data processing was performed using Excel, with the following stages:

1) Calculate the Consistency Index (CI) to assess the consistency of the answers that will affect the validity of the results by the formula:

$$CI = \frac{\lambda \max - n}{n - 1}$$

to determine whether the CI with a specific amount is good enough or not.

2) Then calculate the Consistency Ratio (CR) which is considered to be good, when the value of CR <0.1. CR formula is:

$$CR = \frac{CI}{RI}$$

where RI is a Random Index values issued by Oakridge Laboratory, as presented in Table 2.

List of ICT business incubators as the respondents is shown in Table 3, representing the incubator owned by the government, university, and private sectors to look at the comparison between those three types of incubators.

IV. RESULT AND DISCUSSION

This chapter explains the result of AHP analysis conducted by administrators and managers from 9 ICT business incubators. The result is compared to tenants' satisfaction incubated in those 9 ICT business incubators. The comparison was then discussed spesifically to develop Customer Development Model (Blank, 2006) corresponding to the characteristics of ICT business's startup.

A. Dominant Factors of 8-S

The dominant factors of ICT Business Incubators are obtained by using AHP analysis shown in Table 4.

The results of the questionnaires revealed that the most dominant factors of 8-S was obtained from the perspective of ICT business incubators administrators. The data in Table 4 show that from the perspective of the administrators, *Skill Development* (training and skills development) are considered as the most important among the seven other aspects, followed by aspect of *Synergy*, which is related to the creation of business networks and cooperation (networking), and aspect of *Seed Capital*, relating to access for funding/capital. This perception is in line with the real practices where all business incubators in general are aware and concerned about the need to conduct periodic training and skills development program for the tenants. Various trainings have been held by incubators, such as business planning, management, technical training, and human resource development. This finding is also in line with the result of previous study by Ministry of Research, Technology and Higher Education (2015) which stated that the main role of entrepreneurial incubator is to support successful tenant, by conducting periodic training and mentoring, as well as directing tenants to focus on developing one type of business product and finding access to market. However, misperception about this aspect can make an incubator trapped into the role of training institution only.

Table 4.
Dominant Factors of 8-S

No	Aspects	AHP output
1	Skill Development	0.245
2	Synergy	0.226
3	Seed Capital	0.136
4	Services	0.119
5	*SDM* (Human Resources)	0.096
6	Support	0.092
7	Shared	0.048
8	Space	0.039

IT startups usually already have technical skills in IT, but still need to understand how to run business and how to increase contact to the market (van Vliet, 2015). Though technology entrepreneurs are rarely successful in isolated conditions, success is increasingly obtained through a network of businesses and other organizations (Isabelle, 2013). Therefore, *Synergy* became the next dominant aspect related to the creation of business networks and cooperation. Some respondents have developed a clear program in this regard, as in Bandung Digital Valley (BDV), GEPI, Ideabox, Binus Incubator, and Dit Pui UGM which have activities called Demo Day, to arrange gathering between tenants and potential investors or other business enterprises.

The third dominant aspect based on the AHP is *Seed Capital*. With this perception, the administrators recognise that capital support is very important for the development of startups in early stages, to cover the cost for developing products, market research, and operational expenses. Unfortunately, not all incubators have a program that may provide capital assistance to tenants, either from incubator internally or access to sources of funds or funding institution. Among those 9 business incubators, only Bandung Digital Valley (BDV) and Binus Incubator have provided funding assistance to their tenants.

Based on the AHP, the aspect considered as the least important for ICT incubator is *Space* (provision of workspace). This perception is in

accordance with the fact, that in practice, 3 of the 8 ICT business incubators (excluding I2TB as it has stopped to operate since 2015), do not have huge building area; they are RICE INTI, I2TY and Dit Pui UGM. According to Ministry of Research, Technology and Higher Education (2015), an incubator needs to have at least 500 m^2 of building area. 40% of the area should be intended as working space for tenants. It is found that one incubator, GEPI, does not provide space even for one tenant. However, without a minimum standard of working space, the ICT business incubators still can operate properly. This is rather because of ICT business environment, in which work can be done anywhere (mobile) by relying on laptops/gadgets and the internet connection, without necessarily to be in a stationary location.

B. Tenants' satisfaction towards incubators performance

Based on the results of survey conducted to 12 sample tenants of those 9 ICT business incubators, it has been found that tenants were satisfied with the services (8-S aspects) provided by the incubators. Tenants' satisfaction with the government-owned incubators shown in Figure 3, and the tenant satisfaction with university and private incubators shown in Figure 4 and Figure 5, respectively.

From 2 samples of tenants fostered by government-owned business incubator (RICE INTI and I2TY, excluding I2TB) as shown in Figure 3, it can be seen the satisfaction levels of tenants towards 8-S factor from the incubator services. On a scale of 0–4, the highest average score of satisfaction are respectively the aspects of *Space* (2.6), *Skill development* (2.5), and *Shared* (2.2), while the aspects considered less satisfying are *Seed Capital* (0.6), *Support* (1.12), and *Synergy* (1.16), respectively.

Figure 4 shows the satisfaction level of six tenants fostered by university-owned incubators (LPIK ITB, Binus Incubator, and Dit Pui UGM). Among those 8-S aspects, the highest average values are respectively to aspects of *Space* (3.1), *Support* (3.04), and *SDM* (3.0), while unsatisfying factor assessed from the incubator is *Seed Capital*.

Figure 5 shows the satisfaction level of five samples of tenants nurtured by private sector (BDV, GEPI, and Ideabox). It is found that the factors considered most satisfying are respectively *Space* (3.35), *Skill development* (2.65), and *SDM* (2.6), while the aspects considered less satisfying based on the lowest average values are *Seed Capital* (1.45), *Shared* (1.5), and *Support* (1.7), respectively.

From the data above, it is also known that applied in the three types of ownership-based incubator (government, university, and private), factor of *Space* is considered as the most satisfying service provided by the incubators. It

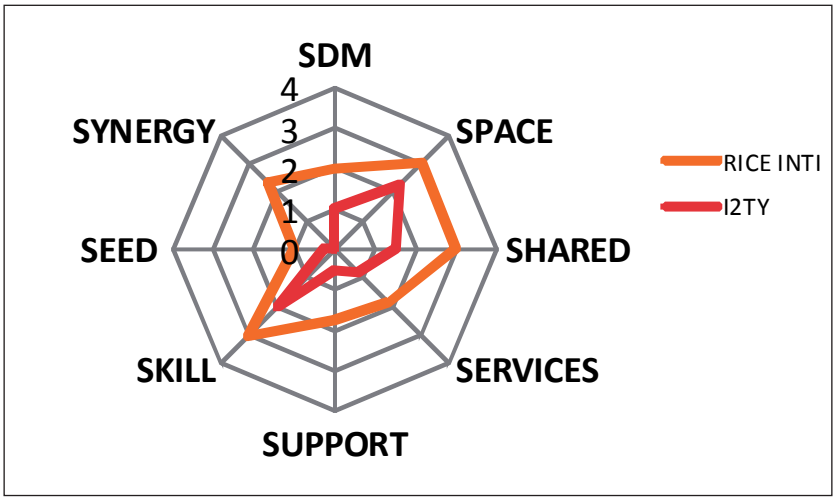


Figure 3. Tenants' Satisfaction in Government Incubators

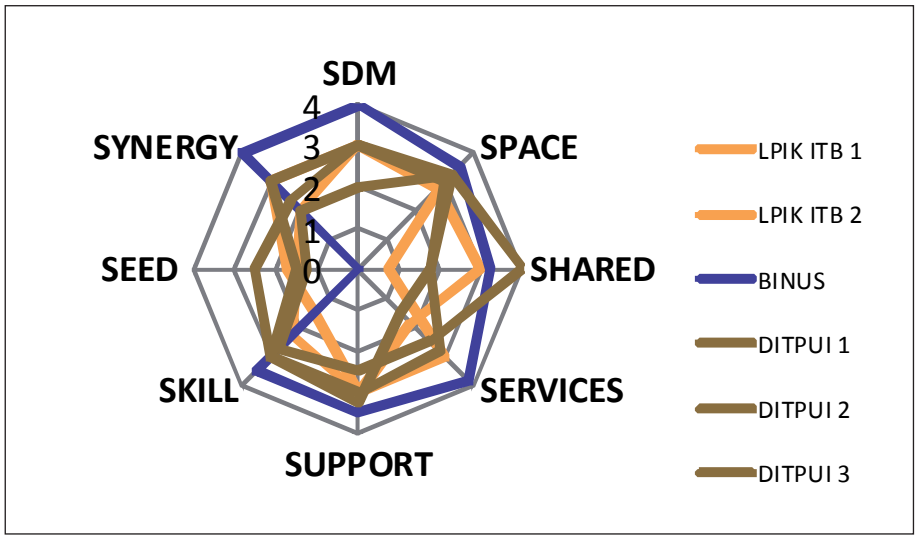


Figure 4. Tenants' Satisfaction in University Incubators

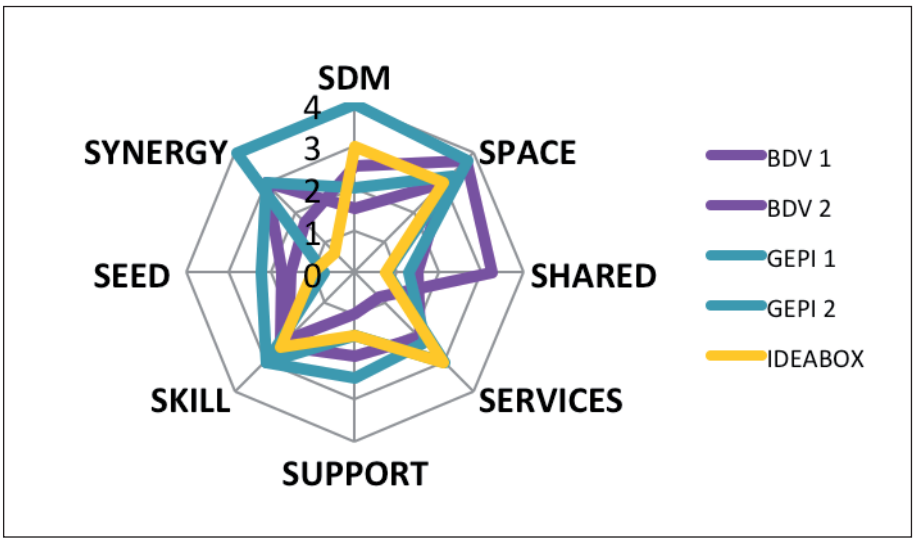


Figure 5. Tenants' Satisfaction in Private Sector Incubators

means that the space provided by the incubators is considered adequate by tenants as a business space/working space). In fact, referring to the previous data, some business incubators have building area and tenants' working space less than the minimum standard.

Meanwhile, the factor assessed by tenants as the most unsatisfying service is *Seed capital*, that relates to capital assistance which can come directly from internal incubator or incubator providing access to other funding sources, financial institutions or investors. This factor (lack of funding) is especially found in the government-owned incubator, showing the lowest score (0.6 from the scale of 4.0). In private and university incubators, this factor is also assessed and also found lacking with higher score, although not by much (1.4–1.45 from the scale of 4.0). Those findings overshadow the fact that some incubators have provided initial capital assistance directly to the tenants (such as BDV and Ideabox), and ensure a clear program to bring together and facilitate cooperation tenants and investors (GEPI, Binus Incubator, Dit Pui UGM). The reason is likely related to stock-sharing policies imposed by the incubators. For example in Ideabox, the share ownership scheme for incubator is 15–30%. In

Dit Pui UGM, the tenants get the largest share of 50%, while the share for the incubator is 20–25% and for the investors is 25–30%. These schemes are considered too outsized by the tenants so that the growth of tenants' business after the incubation period is relatively slow. According to van Vliet (2015), an expert entrepreneur from the Netherlands, "an IT company will need a profit of 25% of revenue; not to distribute it to the shareholders, but to finance the growth of the company."

Further factor of *Skill development*, the most dominant factor based on AHP, is considered acceptable by the tenants in the government-owned incubators (with score 2.5 on the scale of 4.0) and private-owned incubators (with score 2.65 on the scale of 4.0). This means that training programs and capacity building provided by both types of incubators are able to answer the needs of the tenants.

As for the factor of *Synergy*, relating to the creation of business networks and cooperation (networking), the tenants assessment of this factor is less favourable in the government-owned incubators, while in the other two types of incubators the factor is considered sufficient. Therefore, the government-owned incubators need to develop more programs that can expand the network of tenants, as it has been done by university and private incubators.

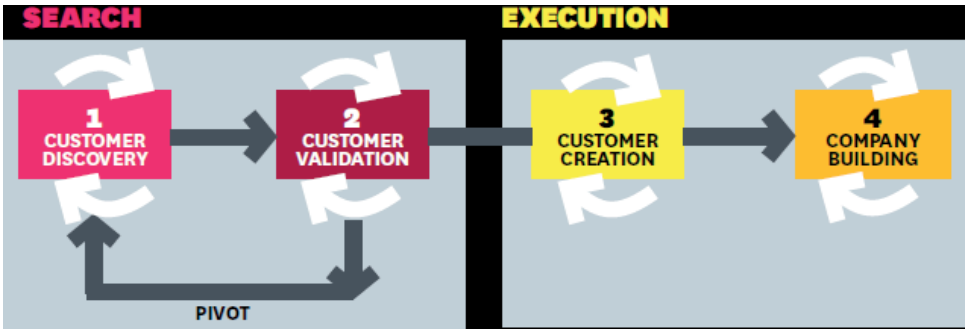
C. Management of ICT business incubators vs other business incubators

Hasbullah et.al (2015) revealed that the most common problems faced by SMEs in Indonesia in developing their business are: 1) lack of funding for business development, 2) lack of information and access to raw material and market, 3) low quality of human resource, 4) low capacity of innovative production, and 5) low quality of assistance. In order to support the growth of new SMEs, some business models can be applied, including 1) franchise model, 2) partnership model, 3) business incubation program, and 4) entrepreneurship education patterns in colleges and vocatinal schools. Therefore, business incubation is one of the models to mature new startups which has several advantages, such as SMEs target or potensial enterpreneur are trained to master all business aspects, supplied with facilities and working capital, and assisted intensively (Syarif, 2009). InfoDev (2011) states that adequate infrastructures, effective policies, and regulations as well as access to appropriate financing institutions are some of the most important factors to support SMEs development through business incubator.

Based on current regulations regarding management of enterpreneurial incubators in Indonesia, there are some services required, and they must be provided during incubation process, namely 7-S: *Space, Shared, Services, Support, Skill Development, Seed Capital, Synergy* plus *SDM* (Human Resource) (which become 8-S). However, standard services required for ICT and non-ICT business incubators are different. In other words, it is essential to meet all those eight "S" aspects, but there are other strategic aspects required to become successful.

Viewed from the characteristic of ICT business, according to Blank (2006), there are four stages that must be completed by startups to grow, namely customer discovery, customer validation, customer creation, and company building. The strategic role of the incubator is located on searching process involving the customer discovery and customer validation process. The incubator helps tenants manage innovation and find the proper market with the proper products due to the fact that the main obstacle for IT startups is mostly in product validation, whether it attracts the market or not. Isabelle (2013) revealed that "new technology ventures have to overcome several challenges to successfully commercialise their new ideas".

Customer discovery stage has become one of the most critical phases for IT startups before settles, as disclosed by Teddy Tee, member of Indonesia Association of Venture Capital (Amvesindo) who is also the CEO of a startup '*Cashlez'*, in a focus group discussion held on August 23th, 2016. He expressed that problem often experienced by startups is they run out of fund before the product can generate profit. Therefore, calculation of how quickly the product



Source: Blank (2006)

Figure 6. Customer Development Model

can be launched must be precise, with a proper expenditure calculation, in order to attract investors. If the calculation of the initial expenditure is too high, it is certainly less attractive to investors. On the other hand, if it is too low, it is less lucrative for the startups to survive. Here, the assistance of an incubator is required to accelerate the commercialisation of the product.

The argument is in line with the research from Ministry of Research, Technology and Higher Education (2015), stating that one of the comparative subjects between ICT business incubation model and non-ICT lies at the boot camp stage conducted by ICT business incubator. Boot camp is intended to improve the ability of product improvement and organisational development of talent source. As a result, the incubation process in ICT incubators is generally more focused on aspect of accelerating the commercialisation of products rather than product development. It is different from the non-ICT incubators, which are generally focused on product development process. Along with this different approach, incubation process in ICT incubator generally takes no more than 12 months, while non-ICT incubator can take up to 3 years.

This excellent point is owned by *Plug and Play*, technology incubator in Silicon Valley, USA which is often adapted as best practice incubator. This is due to the conducive ecosystem where there is firm support of large or reputable companies to complement and synergise with startups. Therefore, startups major obstacle on product validation phase can be overcome, because any potential products quickly captured the market directly with the support of larger companies. According to Indra Purnama from Association of Indonesia Business Incubators (AIBI), speaking in the focus group discussion, there is yet ICT business incubator in Indonesia to be called successful/ideal, so it is necessary to benchmark with overseas incubators.

Although many ICT startups grow and be successful in market without involving business incubator, it does not diminish the importance of an incubator itself. The role that can be highlighted by the business incubator in this case is resource sharing. Business incubator can help tenants in supporting task, such as legal matters and financial affairs, so the startups can focus on product development. This issue was disclosed by Teddy Tee (personal interview 08/23/2016); in spite of that, he built and developed a startup without involving a business incubator. He admitted, based on his experience, that startups will be very helpful if it can be facilitated by business incubators.

In addition, ICT business incubation model generally rely on funding for tenants from institution owner, venture capital and investors (Ministry of Research, Technology and Higher Education, 2015). In fact, established IT startups company becomes larger with the benefit of foreign investment, such as Tokopedia, which received investment fund around $100 million or around Rp1.2 trillion in 2014, as well as Gojek, who in 2015 received funding worth $200 million or around Rp2.76 trillion. Many foreign venture capitals are interested to fund the startups project in Indonesia. Unfortunately, foreign investment licensing in Indonesia by the Capital Investment Coordinating Board (BKPM) recently takes quite

a long time, about 4–5 months. To avoid this problem, some startups in Indonesia has been forced to build a holding company in another country since the beginning of their business. This strategy, of course, made the country lost the opportunity because legally the startups belonged to the country where the holding company originated. Therefore, the rules and mechanisms for foreign investment for startups in Indonesia need to be simplified and accelerated, avoiding complication while still protecting small companies that have not settled down, but will still be profitable for the country.

Unlike in the Silicon Valley in the US, majority of startups founders are business people, usually accompanied by young co-founder. In Indonesia, generally founders are those who recently enter the business so they still lack business experiences, while the proposed business model is still in developing process. It of course will affect the investors' trust.

V. CONCLUSION

Business incubator has strategic role to help tenants grow their business. It is also applicable for ICT business incubators. Among the required 8-S aspects, the incubation administrators emphasise the importance of skill development, synergy, and seed capital aspects.

Meanwhile, tenant's perspective shows that skill development services are considered quite satisfying, either in government, private and university-owned business incubators. However, emphasizing on skill development aspect might lead incubators to provide oversized portion on training activities and susceptible to be trapped as a training institute. The training required by IT startups are especially in terms of managing business and legal aspects rather than technical training. For the aspect of synergy, some business incubators have developed definite program called Demo Day, which is a good opportunity for tenants to meet potential investors or other companies. Supposedly, all ICT business incubators can hold such program. On the aspect of seed capital, which ranked third on the level of importance based on administrators' perspective, tenants in all business incubators considered it as the least satisfactory aspects. Business incubators are expected to provide seed capital assistance for tenants, especially early on or in product validation stages, in order to provide funding for developing product, market research, and operational cost.

Due to the characteristic differences between ICT products and other areas, an ICT business incubator needs to consider some other aspects beyond the 8-S. It is to avoid misleading management and enhance its strategic role in assisting tenants. The strategic role of business incubator is located on searching process involving the customer discovery and customer validation processes, to help tenants manage innovation and find proper market with proper products, and accelerate product commercialisation. Business incubators also need to support tenants by sharing resources, not only facilities such as computer, telephone, or fax machine, but also expertise such legal team, as well as finance and accounting team, so that in early stage, tenants could focus on product development.

Due to the proliferation of business incubator establishment in Indonesia either for ICT or other fields, along with the targeted number of business incubators expansion in each province and district/city, it becomes necessary to form synergy between all innovation development facilities in Indonesia. The synergy can be achieved through the construction of integrated and online database that relate to all such innovation facilities, either incubators, accelerators, or science-techno parks, managed by the government, private sector, universities, associations, and communities. Such database is possible to be built since a business incubator should have a legal license, so its presence is certainly registered.

The database would provide information about management and characteristics of each business incubator, as well as its field of focus. Some benefits could be derived from the database such as: a) giving information and options for talent source of those interested in becoming participants, so that the participants could determine the appropriate business incubation corresponding to his/her business; and b) avoiding the emergence of seasonal incubators which

are formed only to obtain available donation or assistance from the government or donors.

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