

**ORGANIZATIONAL SPONSORSHIP:
BUSINESS INCUBATOR MODEL AND CONCEPTUAL DEFINITION
REFINEMENT**

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ABSTRACT

Studies relating to business incubator has been widely conducted, but the definition is very diverse. The business incubator concept has been criticized because of its inadequate theory. Previous studies of business incubator indicated that the knowledge of business incubator is not based on theory but only anecdotal. While recent studies of business incubator are more likely to suggest and develop a new theory rather than to strengthening the concept itself. Business incubator also divided into several types: University, Corporate, Government and NGOs.

This study has two objectives. First, to fill the gaps of business incubator studies by identifying the role played in the process of developing a new business. Second, this paper aims to answer the question about the exact definition of business incubator. The study conducted among four business incubators in Yogyakarta-Indonesia, such as: University, Government, Corporate and NGO.

This study explores the theoretical foundation of the business incubator. By using grounded theoretical approach and case study, the definition of business incubator has been refined. Business incubator can be explained by integrating several theories, such as: transaction cost economics, real option theory, resource-based view, schumpeterian innovation, network theory, business strategy and organizational adaptation. These theoretical approaches result business incubator as multi-dimensional that consisting of seven roles. The seven roles are efficiency, selection, resource, innovation, networking, strategic support and adaptation. These roles made it clear that the definition of the business incubator concept to be more comprehensive, so that there is no difference in the definition of the business incubator concept as well as among types of business incubator, but the difference is only in the dominant role played by the business incubator.

Key word: Business incubator roles, new business, definition refinement, grounded theoretical approach

INTRODUCTION

Entrepreneurship is the key driver of economic development (Schumpeter, 1934). Entrepreneurial of new businesses have a positive impact on economic growth, innovation and job creation (Acs, 1992; Carree & Thurik, 2010; Stel *et al.*, 2005). On the other hand, the new business is also fragile and prone to failure (Headd, 2003). Business incubator

has a potential to generate new businesses. Because it is a business incubator that can act as agents of change to transform the economy from the base of large-scale manufacturing companies to new and large numbers of small businesses (Campbell, 1989).

Studies relating to business incubator has been widely conducted but the definition is very diverse, mostly focused on the facilities

and resources in an effort to develop new businesses (Allen & McCluskey, 1990; Brooks, 1986; Hackett & Dilts, 2004b; Merrifield, 1987; Plosila & Allen, 1985; Smilor, 1987a; Swierczek, 1992), only a few have defined business incubator as an institution which also seeks a new business that has an ability to survive and reduce the failure rate of its business (Amezcuca *et al.*, 2013; Campbell, 1989; Hisrich, 1988; Kuratko & LaFollete, 1987). The definition differences can result in different effects of the business incubator on new business survival. A previous research has identified an effect of business incubator on new business survival (Amezcuca *et al.*, 2013), while other studies have identified no effect of business incubator on new business survival (Mas-Verdú *et al.*, 2015; Schwartz, 2009, 2013). The failure of the new business incubator may cast doubt on the resource provider (such as banks, suppliers, distributors and established businesses) to invest in it (Tavoletti, 2013).

Previous studies have indicated that the knowledge of business incubator is not based on theory, but only anecdotal. So that the understanding of the functions of business incubators in general and the university support specifically in developing new technologies is just a beginning (Mian, 1996). The insufficiency of previous studies on business incubators are in the case of theory-based incubator classification, process models of new business and definitions of success between incubators and new business (Hackett & Dilts, 2004b).

Recent studies of business incubator are more likely to suggest and develop a new theory (Crawford *et al.*, 2015; Hackett & Dilts, 2004a; Markman *et al.*, 2005), rather than to strengthen the concept of business incubator itself. Markman *et al.* (2005) stated that the process of business incubators in relation to the function of its institution as technology transfer, commercialization of technology licensing strategy and its relationship to the business is relatively unexplored and less based on the theory. Many researches have been conducted descriptively and atheoretically approach, such as the extensive documentation of the various services provided by business incubator (Bøllingtoft & Uhløi, 2005). Conceptual development and business incubator scale development that has been carried out is merely derived from a theory to study the uni-

dimensional measurements (Hackett & Dilts, 2008).

This study has two objectives, first to fill gaps in the study of business incubators by identifying the factors or the role played in the process of developing a new business. This is conducted by redefining the business incubator as well as conducting a review and integration of several theories that are relevant such as transaction cost economics (Williamson, 1973), real option theory (Dixit & Pindyck, 1994), innovation (Schumpeter, 1942), resources based view (Barney, 1991), network theory (Granovetter, 1983), strategic choice (Child, 1997), and organizational adaptation (Hrebiniak & Joyce, 1985). This would result in the roles of the business incubator models more comprehensively and multidimensional. Second, this paper aims to answer the question stated earlier about the exact definition of business incubator. Several studies conducted so far view on the characteristics of business incubator differently, while all kinds of business incubators have the same role in the economic development aspects (Phan *et al.*, 2005).

BUSINESS INCUBATOR AND THEORETICAL REVIEW

The business incubator term is originally coined to describe the place to employ entrepreneurs rapidly before establishing a new business. Definition of business incubators varies in the literature (Cooper, 1985). The definitions can be divided into three focuses: 1) as a change agent in the transformation of the economy (Campbell, 1989), 2) as the facilities and services of business incubation (Allen & McCluskey, 1990; Brooks, 1986; Greene & Butler, 1996; Merrifield, 1987; Plosila & Allen, 1985; Rice, 2002; Smilor, 1987a; Swierczek, 1992), and 3) as the survival of the new business of business incubators (Amezcuca *et al.*, 2013; Hisrich, 1988; Kuratko & LaFollete, 1987). These focuses show that the definition of the business incubator concept is diverse and does not have a unified acceptable definition. This may be caused by the weak business incubator concept of various theoretical studies.

By focusing on these definitions, it can be concluded that a business incubator is an institution that serves as an agent of change to transform the economy through the development of new businesses, by providing

assistance or facilities of physical and non-physical resources, monitoring to reduce the failure rate of new businesses, as well as improving the chance to survive and grow. Facilities can be physical resources; a) share building and b) access/support for rapid capital, or non-physical resources: a) support, b) management and professional consultation and c) network.

Business incubator as an agent of change to transform the economy was developed based on the result of market failures. Markets that fail impede access to capital, knowledge and resources for small and new businesses (vonZedtwitz & Grimaldi, 2006). This view can be assessed from the perspective of Transaction Cost Economics (TCE) (Williamson, 1973). Furthermore, in developing new business, business incubators conducted the process of recruitment and selection of entrepreneurs. This selection process can be assessed from the perspective of real options theory. This theory states that the investment is made less likely or even not returned, and in a state of uncertainty (Dixit & Pindyck, 1994).

Business incubators serve assistance or facilities of physical and non-physical resources. These assistances can be assessed from the perspective of Resource-Based View (RBV) and innovation (Schumpeterian) perspective. Business incubators also take strategies related to new business development. This effort could be analyzed from a strategic business perspective. Business incubators develop inter-organizational networks that could be reviewed by network theory. Further Business incubators releasing new business in an environment that corresponds to the structure. Business incubators seek to improve the chance of survival and growth that can be assessed from organizational adaptation perspective.

Business incubator is an agent of change by developing a new business during a period of economic decline or technological development. New and small businesses assist to stabilize local economy and provide new economy of small businesses based activity. New small businesses create jobs and reduce unemployment. This business incubator is a sensible strategy in developing economies only if they are able to cumulatively help of the new business surviving and accelerate the growth (Campbell, 1989).

Type of business incubator

The term business incubator in Merriam-Webster's Dictionary (2003) means: 1) an apparatus by which eggs are hatched artificially, 2) in medical term, it means an apparatus with a chamber used to provide controlled environmental conditions especially for the care and protection of premature or sick babies. In relation to the business, the incubator is created by both public and private institutions providing facilities for the newly formed business (nascent) (Greene & Butler, 1996; Hisrich, 1988; Plosila & Allen, 1985).

Business incubators aim to create munificent environments in developing new business (Amezcuca *et al.*, 2013; Phan *et al.*, 2005). Such facilities may include: a) share office space, b) support services, c) management and professional consultation, and d) access or support for rapid capital. In addition to the facilities to assist the creation of new businesses, a business incubator is also aimed to reduce the failure rate of new businesses (Campbell, 1989), as well as to increase the chance of survival and growth (Amezcuca *et al.*, 2013; Hisrich, 1988; Kuratko & LaFollete, 1987).

Studies of the business incubators have been differentiated by their types and roles (Amezcuca *et al.*, 2013; Vanderstraeten & Matthyssens, 2012). By their types, business incubators are distinguished to Business Accelerators, Research Parks, Science Parks, Knowledge Parks, Seedbeds, Industrial Parks, Innovation Centers, Technopoles, Networked Incubators (Vanderstraeten & Matthyssens, 2012).

By their roles, business incubators are distinguished to a buffering and a bridging (Amezcuca *et al.*, 2013). 1) As a buffering, a business incubator manages to protect an environment that allows new businesses to develop internal resources while reducing their dependence on the resource. The examples of such role are tax shelters, share office space, back office support, product development support, consulting services, small businesses capital lending and workforce training. 2) As a bridging, a business incubator serves intermediation connection that allows new businesses to acquire social capital and legitimacy for the purpose of building a sustainable competitive advantage. The examples of such role are network services, structural incentives and programs that support

early stage venture investment, science park co-location, membership and association. Business incubator concept in this study is analyzed from a variety of theories to perceive the factors or the role of business incubators so as to obtain a concept that can reinforce the differences or similarities among the various business incubators.

Business incubator and Transaction Cost Economics (TCE)

The market failure theory was originally developed by Arrow (1969) and later became the basis of the Transaction Costs Economics Theory (TCE). The theory afterward was developed and called the Market hierarchy (Williamson & Ouchi, 1981). Some forms of market failure such as the public goods problem, the accuracy problem, asymmetry of information and the exchange of small groups as a result of the dominance of large companies. The problems of market failure are due to two factors: human factors (such as bounded rationality, opportunistic behavior and atmosphere) and transacting factors (such as uncertainty, small size and the limited information) (Williamson, 1973). Market failure theory suggests the vertical integration to overcome the problems of the cost of purchase and sale between the companies (Arrow, 1969).

The reason of business incubator developed is based on the result of market failures (vonZedtwitz & Grimaldi, 2006). The failure of the market creates barriers to new businesses such as; access to capital, knowledge, resources and technology support, recruitment, marketing, advertising, public relations, administrative issues and rules. Business incubator is to be the solution because it acts as an umbrella in managing a premature business with the aim to address the market failure problems (Bøllingtoft & Ulhøi, 2005).

This theory offers a solution to the failure of the market by vertical integration. Business incubator is a form of vertical integration of the premature business. Businesses which are still weak and challenged by transaction costs can be helped through the support of both business incubators formed by the university and established companies. Thus the business incubator is a change agent that plays a role in addressing market failures such as; the cost of information, limited capital

flows, a lack of services, support and financing for small and new businesses (Campbell, 1989).

TCE approach provides additional understanding of the value of a business incubator offering efficiency in developing new businesses, as well as providing: credibility for businesses, diagnosis business needs, selection and monitoring, capital access provision, network access provision both from experts and the systems that support, as well as being a quick learner facilitator or problems solver (Hackett & Dilts, 2004b). Therefore, the first proposition of this research could be described as:

Proposition 1: Business incubators play a role in setting up a new business more efficiently

Business incubator and real options theory

A real option theory is related to investments, defined as investments that are not returned, which is conducted under conditions of uncertainty (Dixit & Pindyck, 1994). This theory is based on three characteristics of the matter: 1) the investment cannot be partially or completely returned, 2) the uncertainty of the return on investment in the future, 3) the extra time in waiting for the benefits of the investment. In relation to decision-making, flexibility in conducting selection is at the possibility to cancel the initiative to invest rather than to replace other investments. Because of that, decision-makers should know which are said and which are not to be a real option (Adner & Levinthal, 2004). Real option is based on the assumption of the existence of uncertainty sources such as commodity prices or the results of the research project. Results from the uncertainty source will be revealed over time, at that time the manager will adjust their strategy (Bowman & Moskowitz, 2001).

In relation to the business incubator, this perspective views new business as identifying options, and then performing an infusion of resources and monitoring and helping as a follow up of the implementation of the options (Hackett & Dilts, 2004b). Although the options of new business are not based on the benefit from the investment, business incubator requires prospective new businesses that have been able to survive. This perspective can explain why business incubators select new business while markets refused (McGrath, 1999). The options of new business is not based solely on investment gains, but the business

incubators expect that new businesses are able to survive.

Proposition 2: Business incubators perform the role of selection of prospective new businesses developing a business that will survive

Business incubator and Resource Based View (RBV)

This theory states that sustainable competitive advantage can be gained from the control of the organization's resources and capabilities that are valuable, rare, and inimitable perfectly and that cannot be substituted (Barney, 1991). However, over the development period the theory has been revised (Barney *et al.*, 2001). In the context of entrepreneurship, RBV with technology transfer from the university, some universities are more successful in developing new businesses (spin-out). Although the university can develop innovation, it cannot necessarily be able to sale in the market (Barney *et al.*, 2001).

Resources on entrepreneurial are viewed from the introduction to the market opportunities, the ability to manage resources and the creation of heterogeneous superior output on the market (Alvarez & Busenitz, 2001). Criticism is given to the opinions of small and new businesses that merely focus on business performance, as such performance focus is only unique for research in strategic management but not in entrepreneurship. Consequently, entrepreneurship is only focused on the discovery and exploitation of the opportunities that will benefit the new businesses (Shane & Venkataraman, 2000).

The definition of business incubators has been widely focused on giving resources (Allen & McCluskey, 1990; Brooks, 1986; Greene & Butler, 1996; Merrifield, 1987; Plosila & Allen, 1985; Rice, 2002; Smilor, 1987b; Swierczek, 1992). Resources in entrepreneur have actually been seen more from recognition of market opportunities, the ability to manage resources and also creation of superior heterogeneous output on the market (Alvarez & Busenitz, 2001). The focus on small businesses is to the survival of the business rather than its performance (Castrogiovanni, 1996). The focus on the business performance is only unique on strategic management research and not on entrepreneurship. Therefore entrepreneurship focuses only on the

invention and exploitation of the advantageous opportunities (Shane and Venkataraman, 2000).

Proposition 3: Business incubators play a role in providing services or facility of resources to new businesses

Business incubator and innovation

Innovation was originally developed by Schumpeter (1934), namely the creation of value through the process of technological change and innovation. Source of innovation includes the introduction of new products or production methods, the creation of new markets, the discovery of new sources of supply and the reorganization of the industry. Schumpeter (1942) introduced a creative destruction that is rents derived from technological change in self-employment, but will disappear when the innovation practiced is well established in economic life.

Entrepreneurial process is a set of activities through innovation by changing the combination of factors of production. Schumpeter emphasizes on innovation through a combination of resources (McGrath, 1999). Entrepreneurial will mess and move the market equilibrium through the products, production processes and new management techniques (Jacobson, 1992). Business incubators can be a means of innovation through product development, production processes and a new distribution system. The other innovation that is defined similarly to business incubator is a science park, a location that is focused on the development of new technologies (Ratinho & Henriques, 2010). From this perspective, then the next proposition is:

Proposition 4: Business incubators play a role in providing innovative training to new businesses

Business incubator and network

Networking allows integration between an organization (business incubator or new business) (Granovetter, 1983). The goal of a business incubator is to increase entrepreneurial talent. Because the main drivers of a new business is the availability of funds and technological progress, and the entrepreneurs themselves. A business incubator in this case seeks to maximize self-employment by providing services and support that complements the talents and resources expected

to raise the potential of entrepreneurship. Thus the business incubator is a planned connector between entrepreneurs and commercialization processes (Bøllingtoft & Uhløi, 2005).

Business Incubators provide a network access to gain knowledge and other resources that are not possessed by the incubator. The network could be 1) the network of business incubators (Baraldi & Havenvid, 2015) such as: universities, research institutions, other businesses, the players in the industry, government and services organizations (Scillitoe & Chakrabarti, 2010), and 2) the network of the new business itself (Bøllingtoft & Uhløi, 2005). Based on this perspective, the next proposition is:

Proposition 5: Business incubators play a role in developing networks for new businesses

Business incubator and strategic choice

Strategic choice an active role in influencing the organizational structure (Child, 1997). Strategic choice is concerned with the new businesses exploitation of business opportunities. When selecting novelty process, the operation will be associated with the generalist strategic choice, but if the new businesses choose a different capability development, the specialist strategic choice can be an alternative. Both choices will have consequences: generalist strategy might be more conducive for the creation of value, while specialist strategy will be more conducive to improve performance, but in a short term (Larrañeta *et al.*, 2012; Vanderstraeten & Matthyssens, 2012).

Additionally, business incubators can also develop strategies both generalist and specialist. A business incubator with generalist strategy offers on-site services, in-depth business operations activities, new business personal contacts with various sectors or technology referred to the field of building service (Amezcuca *et al.*, 2013). Instead, a business incubator with specialist strategy is intended to make the new business activities in a particular sector or technology. Thus offering services in site, in-depth specific technology or sector service, as well as new business personal contact with particular sectors or technology (Vanderstraeten & Matthyssens, 2012).

Proposition 6: Business incubators play a role in providing business strategy training for new businesses

Business incubator and new business adaptation

An adaptation of the new business depends on the environmental determinism and the strategic choice. Organizations that are fully determined by the environment are more easily to perish if it is not being able to adapt. Otherwise if the environment is less determinant, they can adapt by selecting the strategy (Hrebiniak & Joyce, 1985). Business incubators tend to be identified in areas with high levels of agglomeration but lower levels of business development. Science Park is an example of governmental infrastructure development to create opportunities for the knowledge and novelty of agglomeration through the creation of sustainable new businesses (Qian *et al.*, 2011). Novelty powerful capabilities will result in the formation of not only new businesses, but also high research and development. Silicon Valley is one example of Science Park that has become a new business and research and development connected at global level, because of its proximity to world-class universities and the largest consumer market in the world (Phan *et al.*, 2005).

Other environmental management efforts can be conducted by clustering. Clustering is businesses with the same type of high technology or value chain that is interested to form a group (cluster) together in the fields of science, then gradually will form groups that complement each other (Chan & Lau, 2005). Agglomeration and cluster indicate that the business incubator attempts to prepare new business to survive in their environment. Business location is important for new businesses because of the proximity to other businesses that will have a positive effect on the ease of network access (McAdam & Marlow, 2007). But on the other hand, environmental factors such as the level of business density (in the lens of population ecology) will contingent on the new businesses' survival (Amezcuca *et al.*, 2013). Levels of high and low density determine the survival of new business (Carroll & Hannan, 1989).

Proposition 7: Business incubators play a role in preparing a new business in order to adapt to the environment outside the incubator

RESEARCH METHODS

This study developed the concept of a business incubator by using grounded theoretical approach. Hence the lack of business incubator theory, the inductive case study approach is an appropriate methodology in the development of the theory (Eisenhardt, 1989). Positivism case study is the most widely method used in the development of theory and exploration (Leppäaho *et al.*, 2015). The case study is one of the best methods of bridging the rich qualitative evidence in deductive research mainstream (Eisenhardt & Graebner, 2007).

The case study is a method to test the contemporary phenomenon in a real life context, especially when the boundaries between phenomenon and context do not seem firmly by using multi-source evidence (Yin, 1989). The reality is understood through scientific reflection to be definitive (Rynes & Gephart, 2004), in which the philosophy of the case study lies in the integration of theory and practice in real-life case studies (Rendtorff, 2014).

In this regard, the following research questions: 1) what factors or roles are shaping the model of business incubators? And 2) what is the role of these factors on the new business?

Research approach

The case selection is an important aspect in the development of the theory of the case studies (Eisenhardt, 1989). Characterizing the case is the result of a process of case studies and also one of the fundamental theories (Dumez, 2015). Based on the definition of business incubator that was developed at the beginning, the unit of analysis includes business incubator is developed by universities, corporations, government and Non-governmental Organization (NGO). The selection of case study uses multiple cases because it provides more interesting and powerful evidences (Yin, 1989).

The focus of the analysis is aimed at the organizational level, namely business incubator managers and experts to explore the business incubation process. Further analysis is performed at the level of individual businesses which refer to the businesses that have come out of the incubation process. To examine the role of the incubation process for new businesses, both viewpoints are compared one to another. Incubator managers and experts provide information about the internal

functions in the incubator as implementation of the process, innovation, resources and systems (Vanderstraeten & Matthyssens, 2012). Analysis on the both levels is conducted by collecting data through in-depth interviews, observation and archives. It is expected to be a valid conclusion on a higher level of analysis.

Research strategy approach

The research strategy is to conduct a semi-structured interview to each business incubator. The interviewees are incubator manager and staff who are actively running the incubator's internal processes. Repeated interview made to key parties. Each party was asked the other parties, both organization and network of incubators that may be interviewed. At this early stage the data are collected by using open-ended interviews and observations.

The key interviewees consist of five informants of Business incubator manager: university business incubators (Innovative Academy), corporation business incubator (Kampung BNI and Jogja Digital Valley (JDV)), government business incubators (Integrated business Service Centre/Pusat Layanan Usaha Terpadu (PLUT)), NGO business incubators (Business Development Services (BDS)), and 10 new businesses start-up (incubated businesses). This is conducted to gain more profound understanding and accuracy (triangulation) (Jick, 1979). Business incubator is divided into two focuses that is focusing on technology and non-technology. The technology-focused business incubators are Innovative Academy and JDV, while the rest does not focus on IT. Research triangulation is carried out to reduce biased interpretations (Bøllingtoft, 2007). The use of multiple data source, method and researcher will enhance the reliability and validity of a case study (Mathison, 1988).

Analysis approach

The focus on case study analysis method is to reveal the facts and compare them with the proposition (Rynes & Gephart, 2004). This is consistent with the focus of the case study that is to sharpen constructs conducted in two ways: 1) refining the definition of the construct and 2) developing evidence to measure the construct (Eisenhardt, 1989).

Under this method, the focus of the analysis requires a strategy. If the case study is without a strategy, the analysis will be difficult,

otherwise it will produce both internal and external validities (Yin, 1989). This research analysis strategy uses pattern-matching logic, the logic of comparing empirical patterns based and predictions; if the ratio corresponds, the result will strengthen the internal validity (Yin, 1989).

Key insights that emerge from data analysis are factors or roles of business incubator models, namely efficiency, selection, resources, innovation, networking, strategic support and adaptation. The impact of the seven roles on new business is analyzed, the precise definition of a business incubator models is produced and then how these constructs are identified comprehensively is explain.

BUSINESS INCUBATOR: CONCEPTUAL DEFINITION REFINEMENT

The seven factors (efficiency, selection, resources, innovation, networking, strategic support and adaptation) are processes that occur in a business incubator. Figure 1 shows the factors that make up a business incubator. In the input process, a prospective new business that will enter into a business incubator must pass through a pre-selection process and they will gain efficiency in business development while passing the selection. Furthermore, new businesses selected will obtain various facilities, this section is called black box by Hacket and Diltz (2004b) but in fact it can be explained by several theories. In this part, new businesses will obtain resource munificence consisting of resources and facilities, innovation, networking and strategic support. At the output level the new business will obtain adaptation facility that is a stage of new businesses to enter a business environment.

Efficiency

Business incubator helps new business development and supports through capital access, network access and shorter learning time. Business incubator improves entrepreneurial management capabilities and supports or accesses to capital that make the development of new businesses become more efficient. Thus the efficiency of business incubators is consistent with the concept of transaction cost economics (Williamson, 1975), that enables a business incubator for developing new businesses through assistance or facilities

provided by the business incubator. Efficiency is achieved through the help for capital access. Business incubators introduce new businesses to potential investors or capital owner and provide capital assistance to new businesses.

New businesses often fail because of the insufficiency of high risk capital access and weak of managerial skills. Despite their special knowledge, they are often less skillful in businesses. The facilities offered by a business incubator can be a means to address these issues (Bøllingtoft & Ulhøi, 2005). By providing a business incubator for new business reputation so as to facilitate access to capital owners (Studdard, 2006), the business incubator can improve the efficiency of new business development (Smilor, 1987a).

Business incubators provide assistance and access to capital, as well as training in business management skills to new business, so that it will have managerial skill in running the business. Additionally, business incubators also provide facilities for new product development so that new businesses will have technical skills. Thus business incubators facilitate skills and capital access to overcome capital constraints and managerial skills, so that the development of new businesses is becoming more efficient.

Business incubators in the study, owned by University, corporation, governments or NGOs, all of which provide efficiency in new business development. Business incubators provide resources and capital access. It has been conducted in order that a new business is skillful to carry business managerial. Business incubators provide facilities for the development of new products so that new businesses will possess technical skills. Business incubators facilitate skills and access to capital for new businesses to overcome capital constraints and managerial skills, so that the development of new businesses becomes more efficient.

The presentation explains that the first proposition is supported that business incubator play a role in setting up new businesses more efficiently. Efficiency and selection are related to each other. More selective in selecting new business will help business incubators use available resources more efficiently. Similarly, to be more efficient, business incubators need to conduct the selection process in order for an investment to succeed.

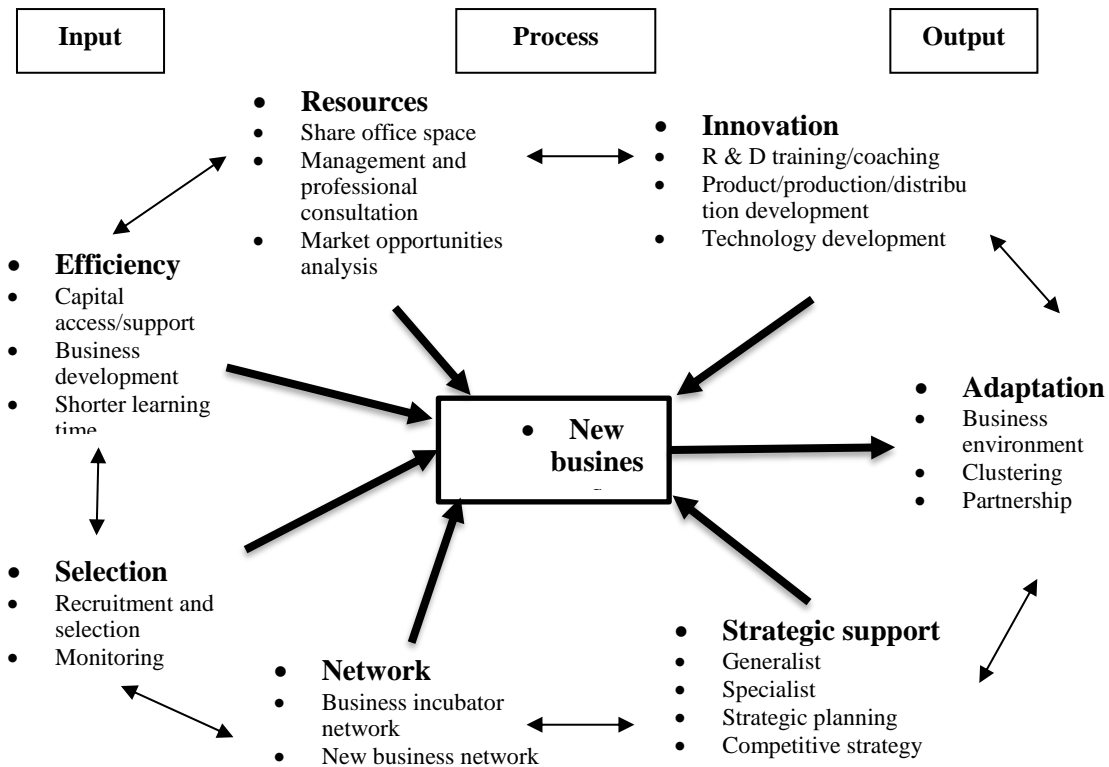


Figure 1. The role of business incubator model

Selection

Business incubator conducts the selection process in finding a new business that will be incubated. Selection is conducted to obtain a candidate who has: ideas, the capacity of creating sustainable value in the future and growth, as well as the ability of rapid skills development (Grimaldi & Grandi, 2005). Performance that can be seen in the selection of the four characteristics are: management, market, and financial products (Hackett & Dils, 2008).

Business incubators in this study generally perform selection to find the right candidate. Business incubators select them strictly in order to make the new business development become more efficient. The steps generally being taken are 1) asking the prospective entrepreneurs to fill out a registration form and 2) the business plan, then 3) asking the prospective entrepreneurs to present their business plans. The next stage is the development stage. If the business incubators do not conduct right selection, it will affect the results of incubation in that prospective new businesses are not ready to commit to the business development efforts. This means that the resources and facilities

provided by the business incubator will be inefficient. During the selection process and incubation, prospective entrepreneurs will continue to face the process of natural selection until they reach the phase out of the business incubator as the success of developing innovative products, a commitment to continue to fight for their business efforts and ability to overcome problems both inside and outside of themselves.

Integrated Business Service Centre (PLUT) is a business incubator developed by the government. PLUT generates new businesses and serves the needs or problems of small and new business. PLUT selects the candidate entrepreneurs by diagnosing the main problems faced by new business, because the problems reported by new business are not always the core/source of the real problems. For example, new business reported that they are facing capital problems, but after being diagnosed the major problem lies in weak financial management or marketing that less effective etc. Based on the diagnosis, new business is put in a PLUT incubator and will receive training or mentoring assistance so that they can successfully run their business.

Business incubators belonging to universities and corporations conduct more rigorous selection. They hope new businesses

and developed products are able to survive. Thus second proposition is supported, that the role of business incubators selection determines the new businesses that will be selected. The selection rule has been related to the interaction with the network developed by business incubators. The surviving new businesses will have greater opportunity in getting networks and participate in the networks.

Resource

The main problem for small and new businesses is the lack of management skills and capital (Everett & Watson, 1998). The resource role could fulfill the skill needed by small and new business. The resource is one of the most widely discussed in the business incubator literature (Allen & McCluskey, 1990; Brooks, 1986; Greene & Butler, 1996; Merrifield, 1987; Plosila & Allen, 1985; Smilor, 1987b; Swierczek, 1992). Resources can be said as the core of the facilities and services in the business incubator. Actual resource in the business incubator is not capital merely, and many businesses prefer a business incubator that provides access to capital than the capital itself. Therefore, this paper excludes capital in resource factors because the capital or access to capital is an efficiency factor of new business development. Actual resource of new and small businesses is access to market opportunities (Alvarez & Busenitz, 2001; Shane & Venkataraman, 2000), management and professional consulting, and there is also a business incubator specialized in providing office space for new business.

In general, business incubators presented in this study have a great attention to resource facility. A university incubator like Innovative Academy and a corporate incubator like Jogja Digital Valley (JDV) both encourage product innovation and testing of market opportunities. In the testing, the process is conducted repeatedly until certain products can be accepted in the market. In addition, new business is facilitated by a variety of consulting and training by bringing both management and professional experts. Business incubator developed by PLUT focuses more on resource factors. They focus more on the provision of consulting and training facilities relating to managerial, professional and market opportunities analyzes.

Generally, the business incubators in the study have a big concern on facility

resources. University incubator such as Innovative Academy and corporations incubator such as Jogja Digital Valley (technology incubator), both to encourage new businesses to innovate products and test market opportunities. During the process, testing is conducted repeated until the product is certainly acceptable in the market. Besides, the new effort is facilitated with various consulting and management training both delivered by professional experts. The business incubators developed by PLUT, Kampung BNI and Business Development Service (BDS) focus more on the resource factors. Their focus is more on consulting and training facilities related to managerial, professional also market opportunities analyzes.

Based on the presentation, it is seen that third proposition is supported that business incubator play a role in providing services or resource facility for new businesses. The role of resource and innovation is interrelated one another. The business incubators resource will support innovation of the new business. The more innovative the new business is, the greater the demands on of business resource facility for new businesses.

Innovation

Product innovation is a boost conducted by business incubators to new businesses. The new business is expected to create or modify product or production process, distribution and marketing of innovation is potential of value creation (Schumpeter, 1934). The study so far distinguishes between business incubators and science parks (McAdam & McAdam, 2008; Phan *et al.*, 2005; Ratinho & Henriques, 2010), in which mission and vision of operating procedures are often changeable (Phan *et al.*, 2005). In relation to innovation, actually no innovation differences between business incubators and science park (Westhead, 1997). Both equally conduct innovation even though they put different focus depending on the strategy that directs the business by the incubators (Vanderstraeten & Matthyssens, 2012).

Innovative Academy belongs to the university, for example, is encouraging new businesses in creating a product, process, distribution, but it is not focused on the type of a particular product. Likewise, the JDV belongs to a corporation, product innovation has been conducted but it is more focused on digital

products. PLUT, although it does not encourage new businesses to do innovation specifically, they provide consulting and training related to the new products. New businesses cannot be separated from innovation because it relates to liability of newness (Phan et al., 2005). This explains fourth proposition that business incubators play a role in providing innovation training for new businesses.

Network

The network is formed by individual social interaction. Networking also allows integration between an organization (business incubator or new business) (Granovetter, 1983). Business incubators can help form a network. Incubation effort gives an opportunity to know each other and work with each other. Thus, business incubator becomes a liaison between the network activities (Bøllingtoft & Uhløi, 2005). The network is one of the effective means to promote product innovation of a new business (Antolín-López *et al.*, 2015).

Business incubators are aware of the importance of the network. They provide and pay attention to the network services for new business. A well-developed network is necessary among new business, business incubator, and between new business with resource providers (investors, suppliers, etc.). Since such network is important, business incubators improve relationships between new businesses and large businesses through partnerships. The partnership is believed to sustain the life of new business, while the network is a new business resource. It supports the fifth proposition that business incubators play a role in developing networks for new businesses. The whole business incubator in this study developed the concept of partnership as networks. Furthermore JDV facilitates new business cooperation with big companies.

Strategic Support

In addition to the five roles, the other important role is the strategic support. The strategy is one way of identifying business opportunities. This is conducted by connecting resources, networking and innovation (Hitt *et al.*, 2001). Business incubators drive new business to conduct generalist or specialist strategy (Larrañeta et al., 2012; Vanderstraeten & Matthyssens, 2012). This depends on the selection of the strategy undertaken by the

business incubator itself (Vanderstraeten & Matthyssens, 2012).

Strategic support distinguishes focus of business incubator from one another. For example Innovative academy of university business incubator used generalist strategy. They gave option to the new business to develop the desired product. Conversely, JDV used specialist strategy that focused on digital products. Besides the two incubators with its strategic focus respectively, PLUT (government-owned incubator) also provide strategic support. PLUT and other business incubator also provides services and training relating to the competitive strategy of the business.

The focus of the specialist or generalist strategy differentiates one business incubator with another, but the role of incubator still remains the same. Thus, there is no difference between business incubators, science parks, and other types of business incubators except its strategic focus. Thus, the sixth proposition is supported that business incubators play a role in business strategy training for new businesses. JDV and Innovative academy (technology Incubator for example) has a big role in innovation compared to other business incubator.

Adaptation

Adaptation of new business is the most important stage and become part of the role of business incubators to prepare for new business adaptation. Hrebiniak and Joyce (1985) stated that in order to adapt the organization, the relationship between the strategic choice and environmental determinism needs to consider. If the strategic choice is high while environmental determinism is low, the organization will have a maximum strategic choice in conducting adaptation. Conversely, if the organization is in a high environmental determinism while the strategic choice is low, they will have minimal strategic choices in conducting adaptation. If the organization is in both high environmental determinism and strategic choice, strategic choices will face many obstacles. But if the organization is both low in environmental determinism and strategic choice, they will have to make changes in conducting adaptation.

The new businesses are particularly vulnerable to environmental influences so that they urgently need assistance in adapting. A

business incubator in this role is functioned to assist adaptation of the new business. JDV for example, helps to facilitate the adaptation of new business through partnerships with companies that require product innovation to be developed. Kampung BNI assists adaptation by providing clusters for new and small businesses. The other business incubators help adaptation by providing consultancy and network access facilities. Similarly, PLUT conducts intensive monitoring to assist new businesses in order to be able to adapt to their environment. Based on the analysis showed that the seven propositions developed has supported. Business incubators have performed seven roles in developing new business.

DISCUSSION

Business incubator has been called by various names while providing the same role in

economic development (such as Business Accelerators, Research Parks, Science Parks, Knowledge Parks, Seedbeds, Industrial Parks, Innovation Centers, Technopoles, Networked Incubators) (Vanderstraeten & Matthyssens, 2012). The role consists of seven factors conducted by the business incubator is the insights that emerge from this paper. The role of the seven factors, namely efficiency, selection, resources, innovation, networking, strategic support and adaptation of the organization played by all types of business incubators is only distinguished from different proportions. Table 1 shows the seven roles played by business incubators developed by universities, corporations and governments but in different proportion.

Table 1. Role Focus of Business Incubators

Business Incubator Type	Efficiency	Selection	Resource	Innovation	Network	Strategic support	Adaptation
University: Innovative Academy	High	High	High	High	High	High	Medium
Corporation: Jogja Digital Valley	High	High	High	High	High	High	High
Kampung BNI	High	High	Low	Low	High	High	High
Government: PLUT	High	High	High	Low	High	Medium	High
NGO: BDS	High	High	High	Low	High	Medium	Medium

The role of business incubators can be seen from the perspective incubators and a new business perspective (see table 2). Efficiency indicates the role of economic development of a business incubator. It does not distinguish profit and non-profit business incubators, but based on its role in developing new business. Then the business incubator acts as an agent of change in the conduct of economic transformation. The efficiency of the business incubation is derived from the provision of facilities and services of the incubator. However, the efficiency from the perspective of a business incubator is depending on the number of new business that has successfully

developed than those who failed. If the new business fails is larger than the success, then the role of business incubator becomes less efficient. Therefore, it is important for selecting the right candidate. Hacket and Dilts (2008) stated that in order to obtain a good performance of the selection, the selection process is based on the characteristics of management, market, products and finance.

Selection is an important step for the business incubator. To get a successful business development, business incubators should screen potential entrepreneurs who are committed to follow the process in the business incubator. For that, prospective entrepreneurs

should prepare themselves to be able to fulfill the selection process run.

Table 2. The role of business incubators from the perspective of business incubator and new business

Perspec- tive	Efficiency	Selection	Resource	Innova-tion	Network	Strategic support	Adapta- tion
Business incubator	Business incubator capable of producing a large successful business new business	<ul style="list-style-type: none"> Recruit- ment and selection of candi- dates Monito- ring the develop- ment process 	Provide share office space facilities, training/ coaching consulta- tion and analysis of market opportuni- ties	<ul style="list-style-type: none"> Provide R&D training Product develop- ment, production and distribution process 	Business incubators provide network facilities	Business incubator strategy leads to a generalist or specialist	Preparing environ- ments, clusters and business partnership
Business new business	The formation of new businesses efficiently through capital access and learning	<ul style="list-style-type: none"> Prepare to be eligible to become a new business Follow the stages of the selection process 	<ul style="list-style-type: none"> Facilities, training and consultancy has an impact on business develop- ment Obtain analysis of market opportuni- ties 	Innovation facility impact on the develop- ment of products or production or distribution of new business	Networks impact on business develop- ment	Both generalist and specialist strategies impact on the progression of new businesses	Environ- ment, clusters and partner- ships help new business adaptation

Resources, innovation, networking and strategic support provided by the business incubator is intended to facilitate the development of new businesses. From the perspective of new business, resources, innovation, networking and strategic support are expected to impact effectively on new business development. In terms of adaptation, business incubators are working on making a new business to survive. Similarly, the new business expects the assistance after leaving the business incubator.

Based on the theoretical development and business incubator analysis, it shows that each of the theories is interrelated each other. Thus, there is no single priority theory in the study of business incubators, but integration of various theories. Table 3 shows the degree of each business incubator role of the various theories. Various theory approaches suggest that business incubator is a unit of analysis at the organizational level. Based on this, the following definition of a business incubator can be proposed:

Definition: Business incubator is an organization that works to develop new businesses efficiently by facilitating resources, innovation, networking and strategic support, as well as preparing a new business for adapting to the environment to reduce the failure rate of new business as well as improving the chance to survive and grow.

The concept of business incubators indicates the same role of all types of business incubator, only the focus on each factor or role that distinguishes the one and the other incubators. This concept has answered research questions and gaps that missed from the previous studies. The concept of a business incubator can be drawn from a variety of perspectives of business incubator and new business.

Table 3. Theoretical Integration in the role of business incubators

	Efficiency	Selection	Resource	Innovation	Network	Strategic support	Adaptation
Transaction cost economics	High	Medium	Low	Low	Low	Low	Medium
Real option	Medium	High	Low	Low	Low	Low	Medium
Resource based view	Low	Medium	High	Low	Low	Medium	Medium
Schumpeterian innovation	Low	Low	Medium	High	Medium	Medium	Low
Network theory	Medium	Low	Medium	Medium	High	Medium	Medium
Business strategy	Medium	Low	Medium	Medium	Medium	High	Medium
Organizational adaptation	Medium	Low	Medium	Low	Medium	Medium	High

CONCLUSION AND IMPLICATION

Business incubator reviews have been criticized because of its inadequate theory. Contemporary studies seek to answer by offering new theories relating to the business incubator instead of developing a strong concept. This paper seeks to answer the needs of the business incubator concept development using cross-case analysis of various types of business incubator. This concept describes the business incubator as a multi-dimensional, consisting of seven roles: efficiency, selection, resources, innovation, networking, strategic support and adaptation efforts. This concept also offers an integrated view in terms of economic development. Business incubator is not viewed from a variety of types, but rather from the function or the role. Thus, the types of business incubators have the same role, but only the focus of each role is different.

The analysis showed that the role of business incubators cannot be viewed merely from one theory. By using a grounded theoretical approach development, it was found that the role of business incubators can be explained by integrating several theories, such as: transaction cost economics, real option theory, resource-based view, Schumpeterian innovation, network theory, business strategy and organizational adaptation. Further studies will be more useful if examined from institutional theory, which is concerned with the legitimacy of business incubator itself and transfer the legitimacy of a business incubator to new business. Integrating entrepreneurship and resource munificence theory in the new business aspects will also be more useful to deeper, in terms of individual entrepreneurs of

new business. Further studies related to the methodological approach in studying business incubators and new business from the business incubator are needed.

This study has practical and policy implications. The practical implication for business incubator managers is that managers have deeper understanding the role played by the incubator, and which role is more dominant to perform. This will have implications for the selection and efficiency roles of developing new businesses. When the business incubator managers select for new businesses that are less correspond with the typical incubator, it will affect the suitability of the role of the services provided such as: resources, innovation, and strategic support. Technology-based business incubator for example will select new businesses which are able to meet the demands of the incubator and is ready to provide adequate resources, innovation, and strategic support. The suitability of the selection of new business with the dominant role of business incubators is expected to increase the survival of new businesses.

The policy implication of the government is that business incubators are not always able to provide buildings or share office for new businesses. A building facility is one of the roles of resources. Business incubators have seven major roles contributing to the development of new businesses. Therefore the definition and seven business incubators roles in this study will facilitate the government in setting the right policies in an effort to encourage the acceleration of new business development through some supports to business incubators.

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