A STRATEGIC OPEN INNOVATION MODEL: PRODUCTIVITY IMPROVEMENT IN SMALL MEDIUM INDUSTRIES/SMIs

(Indonesian Case)
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Abstract

SMIs business especially in entering global/international market poses significant challenges because they still a low competitiveness due to some problems such as reluctant to innovate the product design and less proactive to seek market opportunity. Therefore, open innovation strategy to utilize network resources with optimum facilities from primary stakeholder becomes an important agenda to build competitive advantage. Open source of primary stakeholder (partner in network) can be utilized by SMIs to innovate that emphasized to “put the partners at the center of innovation”. Innovation made by SMIs will become open innovation which if developed optimally, it will encourage the emergence innovation capability that affect to SMIs productivity and performance. This study presents conceptual modeling to clarify more deeply in how connection formed by building relationship with primary stakeholder can support open innovation through co-innovating and co-creating value. The concept of modeling proposed can be a basis in developing empirical study, so that it can be utilized by business actors especially in the small medium sector to be more involved in global/international business.

Keyword: Open innovation, Stakeholder, Innovation Capability, Productivity, Performance

Introduction

Small and medium industries (SMIs) are important sectors in improving world economy and contribute significantly to the national economy of a country. SMIs is the backbone of the global economy, more than 95% of SMIs are members of the OECD (The Organization of Economic and Cooperation) and gives major contribution to job creation, innovation and economic growth (Dalberg, 2011). The same opinion is expressed by Bhasin and Venkataramany (2010), that SMIs are overwhelming importance to the young and growing economies of most Southeast Asian Nations, Including Indonesia. The number of SMIs in Indonesia reaches 3,982,429 units, or 16.1% of the total small medium enterprises (SMEs) (Ministry of Industry-Strategic Plan: 2010-2014", 2011). SMIs in Indonesia play an important role in encouraging the growth of the national economy. This condition can be seen from the structure of the industry in Indonesia, where small entrepreneurs together with Privately Owned Enterprises (POEs) and the State-Owned Enterprises (SOEs) become three important economic actors that support the development of the industrial sector in Indonesia. SMI has a very important role in supporting
Indonesia’s economic resilience in employment at the grass root level. Labor can be absorbed in SMIs up to 2013 is large enough that of 8,268,588 people (small industries) and 247,610 people (medium industries), compared to large industries that can absorb approximately 6,156,057 people. However, the value of its contribution to the economy still needs to be improved, the amount of donation by SMIs in 2013 is 33% ($44,082.9 Million) compared with the contribution of Major Industries in the amount of $ 87,617.7 Million (Ministry of Industry-Strategic Plan: 2010-2014”, 2011).

The low value contribution of SMIs is partly due to the various constraints faced. In general, the constraints faced by SMIs due to several factors: 1) weakness in accessing and developing market. 2) Weakness in the capital structure and limited access to capital resources. 3) Limitations in building a network (global) and cooperation. 4) Limitations in accessing to and controlling technology. 5) Lack of business information. 6), the high level of competition due to economic globalization and trade liberalization (Bhasin and Venkataramany, 2010). General Director of SMIs-Ministry of Industry states that the real obstacle still faced by SMIs in Indonesia are: 1) the entrepreneurial spirit is still very low; 2) SMIs products are not competitive due to the lack of continuous quality and standards; 3) not well able to forge partnerships with major industry; 4) lack of market information; 5) low accessibility to sources of capital.

Along with the trend of market globalization and trade liberalization, within the last decade, companies included in small and medium-sized enterprises have conducted a variety of international activities (Daft, 2010). The number of SMIs who conduct international activities shows an increase. The condition is driven by market opportunities and the development of communication technology, information and transportation. As stated by Mc Dougall and Oviatt (2003) that recent technological advances and cultural awareness that appear to open untapped foreign markets to new ventures. Then, Wengel and Rodriguez (2006) states that with a depressed local market and a higher local price of their products, SMIs had to find new markets and many switched to the international market. On the other hand, the research results of Patich and Bagby (2006 on Wismiarsi et al 2008) suggests that the small-scale business is experiencing growth leads to the internationalization of the market.

In the Indonesian context, export activity is a traditional way which is generally used by various business units, including medium-to small-scale work on the international market (Wismiarsi et al, 2008). SMIs that do international business (export-oriented) reach $11 billion with an average growth rate of 5-6% per year (Ministry of Trade-Dit.Jen. NED,2012). Internationalization has provided opportunities for SMIs in developing their business. Verdin and Heck (2001) states there are three main benefits for companies that undertake internationalization: cost advantage, network benefits and learning opportunities. Studies conducted on 400 SMIs in Malaysia have identified the reason why doing international business, namely: 1) to increase profit (36.7%), 2) the existence of market opportunities (23.9%), 3) business expansion and marketing the product (12.8 %), and 4) as entrepreneurial motivation (13.8%) (Abdulah and Zain, 2011). The two studies are essentially able to show that the decision of SMIs to conduct international business, among others, fueled by the desire to improve the performance and expand the market. Doing international business, among others, through the export not only provide “earnings return” because the value of the foreign currency is more valuable, the actors of SMIs can open new markets that will have an impact on a larger return (Wengel and Rodriguez, 2006).

Furthermore, reports of APEC in 2008 (at Bhasin and Venkataramany,2010) regarding the lack of SMIs exports shows that at the time of globalization, SMIs work fast, but only a small amount
(0.05%) of Indonesian exporters who export directly, most of the exports are done through a third party. The export activities of SMIs actors through a third party (intermediary) is a "buyer-driven commodity changes", where the intermediary agencies play a big role in making the design, pricing, technology and production time (Tambunan 2010). Dependence on third parties are caused by several obstacles, such as lack of financial access to foreign markets, many products do not meet export standards and inability to understand the information related to the world market. Then, report of "Global Small Business Confidence Monitor" conducted by HSBC Commercial Banking (2010), shows the main constraints of SMIs in Indonesia in conducting international business (export) directly are in the licensing terms of exports, high taxes, and the fulfillment of various certifications such as Sucofindo and ETPIK (Professional Ethics of Information and Communication Technology). Tambunan (2007) states that there are two important issues currently faced by SMIs namely: 1) whether they can become an important player in the global markets and not only serve the domestic/local market only. 2) whether they are able to compete with large industry. The productivity amount of non-oil exports reached by SMIs ranged from 17 to 18.9% in 2009-2011 (Minister of Industry, "Strategic Plan: 2010-2014", 2011). This figure shows that the achievement is not optimal from the government target of 40% per year.

Doing international business gives for SMIs tough challenges. Challenges faced are not easy because they have to prepare themselves to face the strong competition with the business actors in the international market. OECD Centre for Entrepreneurship and SMIs in the report entitled Top Barriers and Drivers to SME Internationalization (2009), explains one of the main problems faced by SMIs in Indonesia in conducting international business is lack of innovation capability (OECD, 2009). This situation cause low competitiveness of SMIs. In addition the not optimal of SMIs in doing business internationally is also due to the low ability to build networks which can be used as an open source to improve innovation capability. SMIs limitations to build networks lead to difficulties in terms of: access to knowledge, resources and entry into international markets (Cerrato and Piva, 2008). Network is an important factor so that SMIs can survive and is able to compete with businesses in overseas markets (Farinda et al, 2009). Network plays an important role in the internationalization as stated by Zain and Ng (2006) SMEs use their networks to facilitate their internationalization process. The same opinion is expressed by Chen et al (2011:705) that it has been recognized that long-term relationship with partners in network offer the benefits, because they provide direct and indirect access to key resources, skills and knowledge controlled by other members within the network. This opinion basically states that long-term relationships built by SMIs with a network partner offers strategic benefits because they can provide direct and indirect access to essential resources, knowledge and skills which are under the supervision of a partner network.

In order for SMIs to compete in global/international level, building collaboration with other parties in network resources is a perfect strategy to use open source for innovation. SMEs can develop the co-innovation strategy with partners in the open innovation-based network involving external sourcing (Odentahal,2004). On the other hand, open innovation involves knowledge and expertise outside the company that can be utilized to provide co-creation value to company (Vargo and Lusch,2004). The latest empirical studies of some experts (Reed and Barness,2012; Martinez et al 2014, Baldwin and Hippel 2010) show that open innovation supports the creation of competitive advantage that can generated profit through investment of innovative design.

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The key to success in utilizing open source through network resources is to build and maintain relationships and collaboration with stakeholder. There are several studies with stakeholder theme such as Rowley (1997), Perrini et al (2007) and Rolof (2008). Rowley (1997) showed that balancing the interest of stakeholders becomes strongly important since the manager is the central figure of stakeholder approach and the emergence of the stakeholder network. Perrine et al (2007) conducted a study using 3,680 companies in Italy can prove that large firms are more likely to identify relevant stakeholders and meet their requirements through specific and formal strategies. Rolof (2008) find that stakeholder management as a fundamental pragmatic concept. To obtain an effective an organization, the main key is to build a good relationship with primary stakeholders (internal and external) in order to achieve organizational goals. Stakeholder management is a systematic approach to organize the relationship between business doers and partners.

The contribution of this paper is to increase understanding of how innovation capability of SMIs can be improved through utilizing network resources of primary stakeholder as an open source. Open innovation is breakthrough for innovation of SMIs in order to sustain in the global/international market. This paper provides a more comprehensive insight related to the modeling of open innovation using the concept of stakeholder approach, innovation capability, productivity and SMIs innovation performance. The proposed model can be used as references which can be applied to develop further empirical studies.

**Literature Review**

**Encouraging open innovation with open source development**

Open innovation is aimed to gain a deep understanding related to sharpen the creative ideas of company products to meet customer needs/wants (Zwass, 2010). Innovation does not need to be expensive and in a long time in the research development, but innovation can take advantage of open sources. On the other hand, there is a challenge needed to be faced by company because it is not easy utilizing network resources owned by primary stakeholders. Hossain (2013) states an open innovation: so far and a way forward. Coras and Tantau (2014:44) state in addition to the advantages obtained, open innovation also contains some risks for companies namely: 1) market risk related to industry regulation, lack of market information and unethical behavior of partners. 2) The risk of knowledge sharing related to insufficient expertise of partners and disclosure of core competence. 3) The risk of technology related to its rivals, technology uncertainty and inability to adapt technology advances. 4) The risk of intellectual property related to knowledge spillover flow to the competitors and in existence formal contract. 5) The risk of workforce related to employees resistance to innovation and change, insufficient knowledge about partners and low support of top management.

Innovation made by the company through breakthrough of closed innovation to open innovation (Melese et.al. 2009 and Chesbrough, 2003). Chesbrough (2003) explains that in closed innovation, the company developed by itself the innovation ideas, fabrication, marketing and distribution. On the other hand, open innovation involves knowledge and expertise outside the company which can be utilized to provide added value to company who created it. Next, Marques (2014:200) affirms that it is not easy to utilize open resources since the essence of open innovation is the sharing of information, but the openness can be related to the sensitive knowledge, that can cause difficulties in commercialization and technology. Then, Arigo (2012:60) suggests that open innovation expressly to the use of inflows and outflows of knowledge among many partners to accelerate innovation. The point is, open innovation emphasizes on the importance to utilize knowledge from external environment and change it in
innovative, product and service processes (Camlek 2012). The same opinion is expressed by Ebert (2007) that “open sources drive innovation”. The latest empirical studies by some experts (Reed and Barness, 2012; Martinez et al 2014, Baldwin and Hippel 2010) show that open innovation encourage the creation of competitive advantage which can generate profit through investment of innovative design.

Stakeholder becomes an active participant in open innovation and can be involved in the development of new product/service (Piller, 2011). In the open innovation, the important role of intermediaries gets bigger in innovation process. As stated by Hossain (2013:35) that “The role of intermediaries beyond the company premises in creating, assessing, technological and social innovation is recently growing phenomenon”. Baldwin and Hippel (2010) propose the idea of open innovation as innovation openness (innovation is the domain of public good - non revalrous and non-excludable) and open collaborative innovation (innovation is encouraged through sharing and contribution in developing individually and collectively). The change in this paradigm still need to be explored more deeply in how personal freedom and social welfare can be increased (Hossain, 2013). Open source expected to improve innovation.

Stakeholder can become competitive advantage if the interaction between actors can be optimized, where all actors are not only seen from the individual side but also as the active party engaged in valued co-creation process. The concept of co-creation value is in line with one of the premises of Service Dominant Logic (Vargo and Lusch,2014) who states that partner can be engaged in the value production creation process and do not only stop in manufacturing process. Next, Fyberg (2009) suggest that network approach can provide a deep comprehension on how stakeholders integrate and how the interaction result in co-created value

**Stakeholder Approach: Managing Relationship with Stakeholders**

Stakeholder management is a systematic approach to organizing the relationship between business and society. In the process of globalization, companies tend to interact with heterogeneous parties. Therefore, companies find it difficult to adapt and often there is a difference in expectations between the company and stakeholder. In such a situation, it is important for stakeholder management to find out the change in the expectations of stakeholders of the company and have an early detection of conflicts that are difficult to solve by the company. Stakeholder management is fundamental as a pragmatic concept. In order for an organization to be effective, the main key is to build a good relationship with stakeholders in order to achieve the goal of organization.

The role of the manager in balancing the interests of stakeholders becomes strongly important since the manager is the central figure of the stakeholder approach. It is not easy to balancing stakeholder interests especially with the emergence of the stakeholder network (Rowley,1997) and multi-stakeholder networks (Roloff, 2008). The willingness of companies to meet the demands of stakeholders depends on two factors: density and centrality of the network (Rowley, 1997). Rowley (1997) states companies would not engage with single stakeholder groups in symmetric communication process, but simply adjust their public relation approach to what the managers perceive as the most common stakeholder demand. So, collaboration and relationship are the keys to success in stakeholder networks. According to Roloff (2008), this situation also applies to the multi-stakeholder networks.

In managing relationships with stakeholders, it is important to recognize the position and role of the company. Company need to identify the relevant stakeholders of the company. Mitchell et al (1997) defines the principle of "Who and What Really Count" by taking into account the
stakeholders through three attributes, namely power, legitimacy and urgency. Broadly speaking, stakeholder theory states that the organization has a relationship with the interested parties that affect the survival of the company. Maintaining relationships with stakeholders and balancing interests of these groups becomes important factors. Theory of stakeholders by Donalson and Peterson (1995) and Freeman (2004) emphasizes that "stakeholder theory is managerial in the broad sense of that term". Therefore, the manager as the central figure needs to take decisions in building good relationships with stakeholders. Since the decision is made by manager, stakeholders can find out how managers distribute limited resources to stakeholders, this process is known as balancing stakeholder interest. Balancing stakeholder interest is not an easy thing, Reynolds (2006) states "Balancing stakeholder interests is a process of assessing, weighing and addressing the competing claims of those have a stake in the action of the organization".

Research question from Beckman (2009) and Sangeetha and Men (2011) stated that stakeholder approach needs to be supported by the capabilities of SMEs to build capital to access network resources and knowledge owned by the stakeholders. Network capital consists of the strategic and calculative relations and networks held by firms "(Huggins, 2009). Then, Huggins (2010) emphasizes that the concept of network capital can be used to access the available resources between the company and other parties/partners based on logical, professional, strategic, and calculative principles.

In summary, the current literature suggests that it is important to manage stakeholder for SMEs in supporting the practice of open innovation. Building collaboration is one effort in managing the relationship with stakeholders. SMEs can utilize network built with stakeholders in order to overcome the limitations of the resource and knowledge owned which impact to the low innovation capability. Therefore, the network built can become the capital for SMEs in support of innovation practices that take into account the following aspects: calculative, rational, economic and professional.

**Putting together the concept: open innovation identify the best idea and driving to the productivity and performance**

Open innovation is rooted in classic innovation principles such as idea generation and selection and success still relies on finding the right way to manage this process. According to King and Karim (2013), to increase idea generation and selection, many organizations are turning to utilizing resources of primary stakeholders. Building relationship become an important factor to success in innovation practice in two things as follows: 1) getting the way of collaborative innovation, 2) narrow technical problem. Open innovation might be the right approach for SMIs and provide benefit for SMIs. One of the benefits is increasing innovation capability which indicate firm’s research and development capability. According to Hemert et al (2013) innovation capability represented by the firms radical and incremental innovation which indicate firm’s learning capability, resource allocation ability and manufacturing capability. Innovation capability for SMIs represent the following aspects: new product, improved existing product, developed new production and process.

Further, innovation capability can improve productivity. Some empirical study (Atkinson, 2013; Huang et al, 2012 and Hemert et al, 2012) can prove that innovation influencing productivity through improved process and products, business practice and external relation. In term of SMIs, productivity means becoming or getting more productive. Hall (2011) in his study concludes that there are substantial positive impacts of product innovation to revenue productivity of SMIs, the biggest impact is on the process of innovation. Productivity are formed
by both output and production contribute to the substantially to SMIs innovation performance (sales performance). Empirical study by Hemert et al (2013) proved that higher productivity lead to higher innovation performance. Another study by Huang et al (2012) describe open innovation has a positive influence on firm performance.

**Methodology: Proposed Model**

Based on theory, concepts and empirical studies mentioned above, a comprehensive conceptual model can be developed (Figure 1), where the essence is to stress open innovation as a breakthrough innovation boundary for SMIs sustainability to participate in the global/international market.

![Conceptual Open Innovation Strategic Model](source)

**2. Discussion and Conclusion**

To take advantage of “golden opportunity”, namely the development of a big global/international market, SMIs actors are required to offer product value. Innovation product is needed to meet global/international market demand. Open innovation is a breakthrough boundary to solve problem of innovation which is expensive and a long time in the research development, but innovation can take advantage through building relationship with primary stakeholder (partner in network). So, primary stakeholder become network resources of SMIs actor that needed to utilize optimally. On the other hand open innovation involves knowledge, resources and expertise outside company which can be utilized to provide added value to company who created it.
The essence of the proposed model is that open innovation emphasizes on the importance to utilize knowledge from external and internal stakeholder and change it in innovative product and process. Involving stakeholders in the process of innovation SMIs actor can develop co-innovation and co-creating value strategy. These two strategies mean that involving stakeholder to support and generate new ideas to improve innovation process. SMIs actor require building relationship and collaboration with external primary stakeholder such as: buyer, supplier, government, university and trade association to utilize external innovation sourcing. Beside this, managing good relationship with internal primary stakeholder like employees and manager is important aspect to adjust internal innovation process by capturing good ideas and putting concept into practice. Integrating external innovation sourcing and internal innovation process can lead the open innovation to put into practice that affect to innovation capability improvement like new product and new process. SMIs actor who have capability in innovation can trigger productivity (production and output) which will give an impact to SMIs innovation performance (sales and profit).

Preliminary research use in-depth face-to-face interview toward 30 owners/managers of the SMIs that conduct international activities (export) in the three provinces in Indonesia: West Java, Jakarta and Banten has done to assess the propose model and to obtain detailed information about open innovation practice of SMIs actor. Evidence supports that open innovation by maintaining good relations with stakeholders can be improved through access to their resources and knowledge. Maintaining good relations with primary stakeholder (supplier, government, university, trade association and employees) improve skills and knowledge, brings positive impact of producing quality products and encourages creative innovation. Regarding to this matter, two respondents who had successfully worked on the export market state:

"...In order to survive in the international market, SMI’s doers should strive to produce quality products with unique and attractive design, offering competitive prices ...".

"... For SME,s doers who had just entered the international market, to be able to compete they have to be innovative, creative and have a good track ..."

Accommodating buyer interests of SMIs is important to be able to share knowledge to improve skills. One of the SMIs doers engaged in handicraft industry in Tangerang successfully doing business internationally (export) for 10 years revealed:

"... I run this creative business because of the help of buyers who always support me to take attention of innovation..... so I always try to build a business relationship with buyers from different countries such as the Netherlands, Japan, Africa and Malaysia... until now I still survive in this business.

In conclusion, in the open innovation, the idea is not vertical but horizontal, which is through utilizing network resources of primary stakeholder that the essence is to put “stakeholder at the center of innovation”. The modeling concept proposed in this paper can be used as reference in the next empirical study development in order to be able to get deeper review and facts in understanding of the importance of utilizing stakeholder network as source of open innovation strategy.
References


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