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Indonesian Fintech Business: New Innovations or Foster and Collaborate in Business Ecosystems?

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Abstract. *There are many innovative products fail to reach minimum critical mass adopter and cease to exist. New financial technology products are not an exception because the current financial technology to facilitate transactions, whether payment, investment, and insurance still function remarkably well. Since new financial technology products have features to better serve low to middle-level customers in the form of higher convenience level and lower costs than the current financial technology products, the initiatives to ensure their success is imperative. Thus, the purpose of this study is to present propositions based on a literature review to encourage companies to simultaneously have two competencies, first competencies in new product development and second, competencies to foster and collaborate with other companies in within and across business ecosystems. The implications of this paper are companies with higher competencies to foster and collaborate with other companies, even though they start with relatively basic innovative product, have higher probability to reach minimum critical mass of adopter and higher probability to become leader in their business ecosystem and government need to maintain their active role to foster collaboration within and across business ecosystem.*

Keywords: *Business ecosystem, business ecosystems leader, collaboration, fintech (financial technology), new product development.*

1. Introduction

Global investment in financial technology (fintech) industry is growing rapidly. KPMG (2015), as one of big four auditor companies, reported that global investment in fintech companies for the year 2013 reached US$ 5 billion, which increased 240% to US$ 12 billion in 2014, and reached US$ 20 billion in 2015, or increase 66% from the previous year. KPMG then analyzed and chose fintech companies from 19 countries and picked 100 companies as the most innovative fintech companies. Based on country of origin, there are 40 fintech companies from America, 20 fintech companies from the EMEA (Europe, the Middle East and Africa), 18 fintech companies from the United Kingdom, 12 fintech companies from Asia, and 10 fintech companies from Australia and New Zealand.

There are four major categories based on fintech products. The first category is transaction and payment with 25 fintech companies; the second category is lending with 22 fintech companies; the third category is investment and wealth management with 14 fintech companies and the fourth category is insurance with 7 fintech companies. These four categories accounted for 68% of the total number of most innovative fintech companies.

In Indonesia, fintech products usually refer to m-payment (mobile payment) products. All major bank, mobile network operators, securities and brokerage companies, and e-commerce platforms already developing their unique version of fintech products, for example Bank BCA with Sakuku, Bank Tabungan Pensiunan Nasional (BTPN) with Jenius, Telkomsel with t-Cash, GoJek with Go-Jek credit, and many more.

Standard recommendation for new product development is almost always developing superior products (Zhou, 2013). The

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objective of new financial technology products is to replace current financial technology products. The problem is current financial technology products still function remarkably well and user do not need to change their usage habit that pose tremendous challenge for new financial technology products to succeed.

Hyytinen, Pajarinen, & Rouvinen (2015) stated that companies that focus their main attention to development of product superiority tend to fail. There are many cases of superior financial technology product fail to replace current financial technology product even though the new financial technology product is being offered by big companies and market leader in their industries. For example, Nokia in 1997 introduced m-payment using Short Message Services (SMS) in Finland to pay soft drinks bought from Coca Cola vending machine. This innovative payment method failed to achieve the minimum critical mass of early adopter even though Nokia once able to become one of the largest global mobile phone firms; NTT DoCoMo in 1997 introduced DCMX, another m-payment product, however, this product had limited market acceptance. DCMX was accepted only in Japan so this new financial product failed to become a global m-payment product. Both companies fail to reach minimum critical mass of early adopter, Nokia in home market and NTT DoCoMo in global market.

There also success story of new product development. The first one regarding success story of innovative product developed by innovative companies with other companies within same business ecosystems. For example, Microsoft's Windows Operating Systems and Minitab's Statistical Software. The second one regarding success story of innovative product developed by companies from different business ecosystems. For example, Microsoft Corporation as software developer collaboration with Intel Corporation as hardware developer. Microsoft Corporation able to collaborate within and across business ecosystem to reach minimum critical mass of early adopter

Different story of innovative product raise question what variable that may increase the likelihood of innovative product success in achieving minimum critical mass of early adopter. One concept that gaining popularity is business ecosystem, companies need to co-evolve with other companies to succeed (Moore, 1993). Based on business ecosystem perspective, the purpose of this paper is to address three research questions. What is the importance role of business ecosystem relative to innovativeness of new product in achieving minimum critical mass of early adopter? What is the role of business ecosystem leader to foster and collaborate within business ecosystems? What is the role of different business ecosystems leader to foster and collaborate across business ecosystems? This paper provide the underlying logic and findings for companies to have competencies to foster and collaborate within and across business ecosystem. The findings on this paper also intended to urge government to maintain active role to foster collaboration within and across business ecosystems.

2. Literature Study and Hypothesis Development

The success of new innovative product influenced by the company competencies to coevolve, i.e. cooperate and compete, with other companies within and across business ecosystems to support and satisfy customer needs. The concept as introduced by Moore (1993) and gain widespread acceptance to systematically explain the importance role of business ecosystems in adoption and speed of adoption of new innovative product to reach minimum critical mass of early adopter. Subsequent business ecosystem literatures that follow Moore's insight will be used in literature review and hypothesis development for Indonesia fintech business ecosystems.

2.1. Fintech Business Ecosystem

There are literally thousands of possible ideas for innovation. The idea for innovation can be sourced within the company and through collaboration with other companies (Mu,

Thomas, Peng, & Di Benedetto, 2016). Finding combination of ideas that can reach minimum critical mass of early adopter in the shortest time possible is the key (Schemmann, Herrmann, Chappin, & Heimeriks, 2016).

Dujarric and Hagiu (2009) and Rong, Hu, Hou, Ma, and Shi (2013) argue that company that focus only on existing competencies face risks of making the wrong innovation. It is easier to develop new product based on existing competencies than develop new product based on user need. It is also more comfortable for companies to maintain the status quo.

User diverse needs provide opportunities for company to develop several ideas for product innovation simultaneously. Since company's resource is limited, company need to collaborate with other company to overcome resources limitation to improve their new product offering and reduce time needed for user to adopt the new product (Shim & Shin, 2016; Guo & Bouwman, 2016). Collaboration among companies also needed because it is an enormous task to change consumer habitual choice from the current product to a new product, and there are no companies big enough to force consumer adoption of the new product. When companies collaborate with other companies within an industry, they create a business ecosystem that promote common business process and infrastructure sharing to increase the density of the knowledge rapidly (Clarysse, Wright, Bruneel, & Mahajan, 2014, Graca & Camarinha-Matos, 2017).

Pera, Occhiocupo, and Clarke (2016) suggested collaboration motives and resource integration among stakeholders need to be developed simultaneously. There are three motives for collaboration. First, reputation motive, this refers to how collaboration may enrich company reputation. Second, experimentation motive which refers to how to create hybridize structures and tools from other companies from different lines of industries to use in their ecosystems. Third, relationship motive which refers to strengthening ties among stakeholders in order to create a mutual feeling of urgency towards business ecosystem development.

There are also three levels of resource integration. First, resource integration is communication encounters, which refers to consensus building and creates shared identity in the business ecosystem. Second, resource integration is implementation and support encounters which refers to the identification and organization of micro-specialized competencies that belong to different stakeholders into complex resources integration. Third, resource integration is the same implementation and support encounter which formalizes synergy amongst stakeholders. The combination of motives and resource integration determine the level of collaboration between companies.

Based on above discussion, I propose hypothesis as follow:
Competencies to foster and collaborate within business ecosystem are more important than competencies to develop new innovative product in achieving minimum critical mass of early adopter.

2.2. Fintech Business Ecosystem Leader

According to Dujarric and Hagiu (2009) a business ecosystem leader is defined by three elements. The first element is business ecosystem leader controls the key standard and interfaces in the industries, which will enable various ecosystem stakeholders to work with each other. The second element is business ecosystem leader controls the timing and the pace of innovation in the industry. There are times when business ecosystem leaders need to set the pace and the direction of innovation. However, there are also times when business ecosystems leaders should reduce their role and let the market lead the pace and the direction of innovation. The third element is business ecosystem leader measured by their ability to expropriate a large share of the value created by the entire business ecosystem.

Zahra and Nambisan (2012) proposed four types of dynamic interplay between business ecosystems leaders and other stakeholders in a business ecosystem in figure 1. From

perspective of business ecosystems leader, Jam Center Stage do not have permanent business ecosystems leader and the other three stages, i.e. Orchestra Stage, Creative Bazaar Stage, and MOD (Modification) Station Stage do have permanent business ecosystems leader.

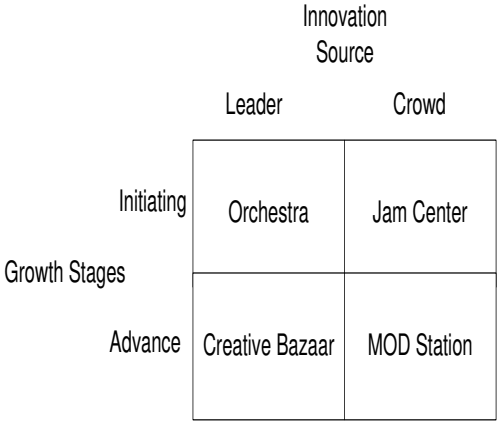

Figure 1. Dynamic Interplay within The Business Ecosystem.

In the initiating growth stage, there are two models of dynamic interaction. The first dynamic interaction is Jam Center Stage, which refers to the improvised nature of innovation and lack of centralized leadership. The second dynamic interaction is Orchestra Stage which refers to dominant companies or business ecosystem leaders that set the pace and direction of other companies' innovations.

In the advanced growth stage, there are also two models of dynamic interaction. The first dynamic interaction is Creative Bazaar Stage, which refers to business ecosystem leader activity in acquiring innovations from other companies to create new competencies and unlock new opportunities. The second dynamic interaction is the MOD (Modification) Station Stage, which refers to the company's inability to fully comprehend and service diverse market wants. This condition force companies to give their customers opportunities to create their modifications and distribute the new modified products to other customers. For example: games industries have long tradition in nurture close relationships with their users or gamers in order to develop new products using a well-defined technology or platform.

As previously mentioned, Jam Center Stage have no permanent leaders that set pace and direction of innovation. This also implies market want is not well defined and constantly changing that put considerable pressure for new innovative product to succeed. While Orchestra Stage, Creative Bazaar Stage, and MOD Station Stage have business leader that set the pace and direction of innovation that increase the likelihood for new products to succeed.

Based on above discussion, I propose hypothesis as follow:
Business ecosystems leader is central to the viability of business ecosystems through setting pace and direction of innovation.

2.3. Fintech Business Ecosystem Leader Collaboration Within and Across Business Ecosystems

To break from Jam Center Stage, companies need to adopt 'get big fast' stage to achieve critical mass minimum early adopter in the shortest time possible. Research from Oliva, Sterman, and Giese (2003) shows 'get big fast' strategy that focuses only on low pricing and heavy marketing campaign while their capability to fulfill orders or provide high-quality services cannot catch up with the market demand poised to fail. Sterman, Henderson, Beinhocker and Newman (2007) also argued that 'get big fast' strategy increases the risk of overcapacity in the industry. Companies that are able to address the above issues are more likely to become business ecosystem leaders.

'Get big fast' cannot be executed alone. It has to be done with other companies to create quasi-monopolies to entice and grow network of user and transform user into user-developer to gain more acceptance (Lu, Rong, You and Shi, 2014). When companies collaborate with other companies whether they are from same industry or different industry, they will create systemic innovation (Maula, Keil & Salmenkaita, 2006). Transformation of user into user-developer may unlock new opportunities (Overholm, 2014; McKelvey, Zaring, & Ljungberg, 2015).

Adopting new product is an imitation process, it is important to have adjacent early adopter to provide powerful word of mouth effect (Chu & Sung, 2015). Assuming new imitation and adoption of new fintech products require two adjacent users, i.e. friends, colleagues, repsented by two nodes that already adopt the new product. Company that only have one early adopter represented by node 1 or scattered early adopter represented by node 1 and node 4 or node 6, the network of user will not grow because there are no influence from 2 adjacent nodes. But when the company succeed in adding another early adopter adjacent to node 1 and represented by node 2, the companies now have two adjacent of user. The adoption of node 1 and node 2 will induce node 3 to adopt the new product because 2 adjacent nodes, i.e. node 1 and node 2, already use the product. The process then is repeated to node 4, node 5, node 6, and node 7. The node 2 is the key node that enables the product adoption across the network. Hence, rather than keep on increasing marketing expense to increase awareness to the entire network, companies should focus their attention to identify and put marketing effort to node 1 and node 2. I present the imitation process within business ecosystem in figure 2.

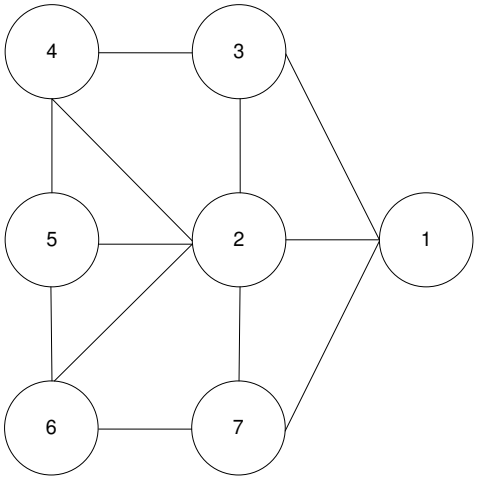

Figure 2. New Product Adoption Network.

The benefit of collaboration will be enhanced if two or more business ecosystem collaborates. For example when bank and mobile network operator collaborate, they may economize their marketing efforts further and increase the speed of customer adoption. If node 1, node 3, and node 7 are the customer of the same bank and the same mobile network operator, then node 8, who happen to be customer of the same bank and the same mobile network operator, may be induced to imitate and adopt the new product because node 1, node 3, and node 7 have already adopt the product. If node 3, node 7, and node 8 already adopt the product, node 9, node 10, and node 11 will follow the same logic and adopt the new product. This adoption across bank and mobile network operator may be achieved without large marketing efforts. The collaboration will ensure the attainment of increasing return of scale for both the bank and mobile network operators. I present the imitation process between business ecosystems in figure 3.

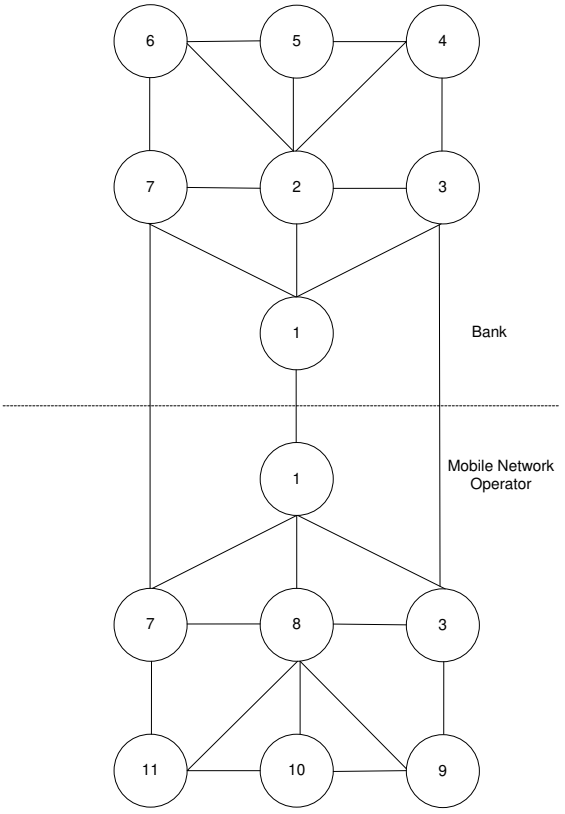

Figure 3. New Product Adoption Network Across Two Business Ecosystems.

The prospect of growing faster than their competitors using collaboration between industries and business ecosystems reduces the need for the most innovative product because customers may not be ready to adopt the most innovative product.

Based on above discussion, I propose hypothesis as follow:
Collaboration between business ecosystem leaders within and across business ecosystem increase the innovative products likelihood to achieve minimum critical mass of early adopter in the shortest time possible.

3. Methodology

Following approach Woo, Pettit, Kwak, and Beresford (2011), I selected journal from database ScienceDirect using main keyword 'business ecosystems', 'fintech or mobile payment', and 'social network analysis' and additional keyword 'collaboration' and 'cooperation'. For literature review, I use keyword 'systematic literature review'. Total 110 papers were obtained from ScienceDirect journal database. 35 papers were identified for fintech or mobile payment. 35 papers were identified for social network analysis. 32 papers were identified for business ecosystems. 8 papers were identified for systematic literature review. I used relevant papers to answer the research questions and provide additional support using data obtained from reputable news websites.

4. Finding and Discussion

4.1. Fintech Business Ecosystem
Investment in new fintech start-up companies mostly concentrated during the period from 2013 to 2016. Fintech Singapore (2016) categorized Indonesia's fintech companies into 8 categories. The first category was personal finance, e.g. NgaturDuit founded in 2010, and investment, e.g. stockbit founded in 2012 and Bareksa founded in 2013. The Second category is payment, e.g. Kartuku founded in 2001, Doku founded in 2007, Dompetku founded in 2008, TCash founded in 2011, Mimopay founded in 2012, Tapp founded in 2013, Padipay founded in 2013, Mandiri e-cash founded in 2013.Veritrans founded in 2013, XL Tunai founded in 2013, Dimo founded in 2014, Ipaymu founded in 2014, Xendit founded in 2014, Veryfund founded in 2015, and Kesles founded in 2015. The third category is point of sales, e.g. Pawoon founded in 2013, Omega Pos Cloud founded in 2013, Dealpos founded in 2013, Moka founded in 2014 and Olsera founded in 2015. The fourth category is lending, e.g. Mekar founded in 2013, Taralite founded in 2015, Pinjam founded in 2015, Uangteman founded in 2015, Kredivo founded in 2015, Investree founded in 2015, and Modalku founded in 2016. The fifth category is accounting, e.g. AkuntingMudah founded in 2013, Jurnal founded in 2014,and jojonomic founded in 2015. The sixth category is comparison, e.g. Halomoney founded 2013, Cekaja founded 2013, Rajapremi founded in 2013, DuitPintar founded in 2013, Pasarpolis founded in 2014, Cekpremi founded in 2014, AturDuit founded in 2014, and Cermati founded in 2015, The seventh category is crowd funding, e.g. Mapan founded in 2009, Wujudkan founded in 2012, Kitabisa founded in 2013, GandengTangan founded in 2015. The eighth category is crypto currency, e.g. Bitcoin.co.id founded in 2013 and Quione founded in 2014.

Indonesia-Investments (2016) showed that smart phone users reached 65.2 million in 2016 and the internet penetration rate reached 100 million relative to 260 million populations in Indonesia. Even though the number of Indonesia's smart phone and internet users is relatively high, the users' knowledge and adoption new fintech product from fintech start-up companies is relatively low. Moreover, smart phone and internet users use only a small number of apps that are available on their device that put considerable pressure for start-up companies to increase product awareness (Perez, 2015).

Beside start-up companies, existing companies also developing new fintech product. For example: Sakuku by Bank BCA and Jenius by Bank BTPN. Information retrieved from Google Play Store on 12 October 2016, showed Sakuku launched in October 2015 and developed by bank BCA with market capitalization value around Rp. 385 trillion only recorded 100 thousand downloads. While Jenius launched in August

2016 and developed by bank BTPN with market capitalization value around Rp. 15 trillion already reach 100 thousand downloads within less than 3 months. It seems that bank BCA did not see Sakuku as a strategic imperative while bank BTPN saw Jenius as a strategic imperative and invested a large sum of money, i.e.Rp 500 billion, accordingly. The BTPN key success factor is their competencies to rapidly develop a business ecosystem of vendors that accept m-payment transaction.

Above case shows that start-up companies that focusing in product superiority relatively fail in achieving minimum critical mass of early adopter if compared with Jenius from Bank BTPN that only added a little bit more convenience to existing banking products but succeed to achieving minimum critical mass of early adopter in the shortest time possible. Companies with higher competencies to foster and collaborate with other companies, even though they start with relatively basic innovative product, have higher probability to reach minimum critical mass of adopter and higher probability to become leader in their business ecosystem. This argument support our hypothesis that competencies to foster and collaborate within business ecosystems are more important than competencies to developed new innovative product in achieving minimum critical mass of early adopter.

5. Conclusion

Financial technology products are always about convenience and cost minimization from the creation of money to credit card and lately electronic money. A new fintech product faces an uphill battle to prove that it is better than the current fintech product. Besides current fintech products, new fintech products that rely heavily on apps also need to compete with other products that are not related to finance, for example, email, text messaging, etc. The above condition expose fintech companies to failure risk even though they provide the most innovative and superior product.

Indonesia's fintech industries are at the early stage as shown from the relatively new investment in fintech products with no dominant firm existing in the market, and the users of fintech products concentrated only in a handful of big cities. This condition exposed fintech companies to high failure risk due to low adoption rates and risk of technological shifts from foreign competitors that enter Indonesia's market.

To reduce high failure risk, fintech companies should not only focus on developing an innovative product but more importantly developing their business ecosystems and collaborating across business ecosystems. Collaboration across industries enables companies to grow faster with lower cost. Government need to maintain active role to foster collaboration within and across business ecosystems.

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