THE IMPACT OF THE DEVELOPMENT OF FINTECH ON THE EXISTING FINANCIAL SERVICES IN INDONESIA

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Abstract: In the early of 2016, the field of finance technology or FinTech in Indonesia has experienced significant development. FinTech places technology as the basis of business in the financial sector. Local and foreign players compete to get a license from Bank Indonesia so they can run the business, investments to Fintech companies strikes gradually. On the contrary, as a new player in financial services industry, Fintech might also ‘threat’ and give future impacts on the existing provider, traditional banks. Fintech companies are able to perform services in a more efficient way for customers compared to conventional bank. Some findings have shown that Fintech affects or is changing the business model of banking industry associated with some considerable risks. Since the technology is still new, one of the key objectives is to understand whether FinTech will disrupt the financial services here in Indonesia or will collaborate with the existing providers. This study will analyse through relating research papers and other relevant secondary data produced by industry experts. The study also includes primary data collection through qualitative data analysis. A semi-structured interview will be conducted and will involve eleven respondents from industry expert within the financial services industry and FinTech and Indonesian regular financial services users. These interviews will provide direct insights and wider perspectives of experts or financial services providers and Indonesian customers.

Keywords: Finance, Banking, Innovation, Fintech, Qualitative Research

1. Introduction

Indonesia as one of the developing countries holds a great potential in Fintech development. The number of Fintech Startups has doubled recently and positioned the regulators in quite pressure to stabilize and enable operations and protections in the financial services sector. Although Fintech companies’ market share is currently still small compared to established conventional bank’s market share, however Temelkov (2018) suggests that in longer term, Fintech startup might become a serious competition. The driver behind disruptions first is technology development as a powerful tool to stimulate challenge because they enable business models of entry that only require very little investment (IDB, 2017). PwC Indonesia Advisor, Chan Cheong on PwC Survey Jakarta in 2018 said that the phenomenon is likely to happen also because of the changing of the consumers specifically in Indonesia have started to get used to digital lifestyle that is occurred almost in every linkage of life. PwC (2018) reports that until now, only few numbers of bank in Indonesia that has been investing in Fintech as their main investment in order to prepare for the upcoming trends, recorded only 22% percent from Banks in Indonesia Technology is seen by many in many industries especially mid-size banks as a way to level the playing field with the larger banks by
providing new channels to access customers while lowering down the cost of customer acquisition and servicing. The new business models of financial intermediation are adequate to facilitate access to finance the SMEs and unbanked individuals which outcomes will be positive incentives for firms’ formalization and financial inclusion (IDB, 2017).

The US fintech categories dominate in payments and lending of 29% and 28% (Citi, 2016 “digital disruptions”). From DailySocial report (2018), payment and lending sectors are also the most popular innovation in financial services industry in Indonesia. The Central Bank of Indonesia regulate directly the payments activities whereas the lending and investing activities are under the authority of the Financial Services Authority or Otoritas Jasa Keuangan (OJK). The long-term goals of Indonesian government is the digital economy in which Fintech can be helpful specifically to increase digital literacy, financial inclusion and GDP acceleration. But as the existing players of financial services as still broadly operating in a strict code of conduct, some segments will be ‘untapped’ and underserved, in this case the underserved is pointed out to be the small to medium enterprises (SME). The disruptive nature of Fintech does occur and seemed to take bank’s customers especially retail banking. Prior studies found that service convenience, innovative products and consumer’s perception of risk have positive relationship to influence purchase intentions (Khazaei et al., 2014). Fintech adopts similar business model with the established incumbents and eventually traditional banks have to design new business model and products to fulfill customer’s needs.

2. Literature review

Technology Innovation and Investment in Financial Services Industry

The importance of financial innovation is driven by the importance of the role of financial industry in economic growth and seen as a new manifestation followed by reduction of risk, costs of provision of product/service/instrument that needs of involved of parties better than before (Frame and White, 2014). A book by Cole et al. (1996) cited Schumpeter (1934) from the perspective of early twentieth-century Europe view financial institutions as sources of funds for entrepreneurs and businesses. The financial services industry provides consumers or businesses to effectively manage money. The financial services consist of economic services provided by the finance industry in a country that includes credit unions, banks, financial institutions, accounting firms, consumer finance companies etc. According to analysis by Freedman (2006) financial system is viewed similar to commercial systems involving buying and selling products in different markets at different times through trading systems and technology in uncertain environment (Freedman 2006; Merton 1992 p 12).

The effects of digitalization have arrived in the banking industry long ago. In a report by McKinsey&Company (2016), they forecast that Japanese and US banks’ profits are at risk by 2020 and will lose between $1 billion and $45 billion depending on the extent of digital disruption. Whereas banks in Europe and United Kingdom are more severe to digital disruptions and could lose $35 billions of profits. Then start-ups look from technological perspectives and create Fintech and are challenging the market share of traditional banks. Arner et al. (2015) is cited in Zavolokina et al. (2016)’ work to define Fintech as the use of technology to deliver financial solutions. It describes modern technologies that enables financial services such as internet-based technologies in e-commerce, mobile payments, crowd-based financing, P2P lending etc.
Table: Types of Fintech Activities (Davis & Maddock, 2017 p 34)

<table>
<thead>
<tr>
<th>Payments and transfers</th>
<th>Lending and financing</th>
<th>Retail banking</th>
<th>Financial management</th>
<th>Insurance</th>
<th>Markets and exchanges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payment backend</td>
<td>Peer-to-peer</td>
<td>Consumer banking</td>
<td>Small and medium tools</td>
<td>Agent</td>
<td>Retail investing</td>
</tr>
<tr>
<td>Point of Sale</td>
<td>Consumer lending</td>
<td>Banking infrastructure</td>
<td>Personal finance</td>
<td>Brokerage</td>
<td>Institutional investing</td>
</tr>
<tr>
<td>International transfers</td>
<td>Business lending</td>
<td>Financial research/data</td>
<td>Financial transaction security</td>
<td>Blockchain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crowd funding</td>
<td></td>
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<tr>
<td>Equity Funding</td>
<td></td>
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</table>

Source: Business Insider Intelligence (2016)

Accenture (2015) reports that the number of investments into Fintech companies and startups has risen dramatically between 2013 and 2014, from USD 4.05 billion to USD 12.21 billion in 2014. Banks started to expand for IT expenditures by 1990s as the industry moved to the internet economy, for example the merged FleeBoston that spent USD 100 million to launch internet banking services to cover its main commercial and retail banking services (Jordan and Katz, 1999). In 2015, some leading American banks, Bank of America and J.P Morgan issued reports with the Securities Exchange Commission (SEC) that they would spend more than USD 400 million and US$500 million in order to defend against cyberattacks and other core banking functions (Morgan, 2016). Overall, IT expenditure spending for banking industry is forecasted to rise to US$480 billion in 2016 from a total annual projected of spending on IT of US$2.7 trillion around the world (IDC, 2016). These indicates that traditional banks are taking technology adoption into more serious stages.

The sudden upswing of fintech startup can be attributed to the 2008 global financial crisis (Koetter and Blaseg, 2015). A recent IMF study (He et al., 2017) found that market valuation of fintech firms have quadrupled since the global financial crisis. Some significant reasons are the trust crisis towards banks that led to strategic defaults on mortgages. The arising of Fintech startups which primarily have clean record might dominate in the lack of confidence in traditional banks (Haddad and Hornuf, 2018). When the cost of debt increased, Fintech startups provide crowdlending, crowdfunding and factoring to fill the gap.

**Highlights of Fintech Development in Indonesia & Business Issues Exploration**

Banking Industries in Indonesia is an extraordinarily engaging market for investors to compete, moreover Indonesia owns massive population of approximately 241 million, fourth position in terms of population. In recent years Indonesia's economy based on Gross Domestic Product (GDP) at current prices in quarter I of 2018 reached Rp3 505.3 trillion and at constant 2010 prices reached Rp2 498.4 trillion (Badan Pusat Statistik, 2018). If Indonesia implement and make digitalization into realization, it is projected that the GDP will grow 10% by 2025, estimating in USD 150 billion (McKinsey&Company, 2016). With the low level of financial inclusion, the goal with Fintech is to increase a formal account for SME (small to medium enterprises) so that they can have a proper productive loan. Thus, the challenge of digital illiteracy and financial exclusion still require some few years before enabling the digital economy goal.

Fintech development in Indonesia is stemmed from e-commerce and online transportation businesses. From the total investment value from 2012-2017, e-commerce holds 58% and transportation holds 38% of total investment. Google-A.T. Kearney Study 2017 report that
China is the biggest foreign investor funding for Indonesian startups and accounting for 95% of its investment value.

In Association of Southeast Asian Nations (ASEAN) countries including Indonesia, Malaysia and Thailand still hold an uncertain number of banked users adopting fintech. These countries still need more high mobile penetration and government support to reach the tipping point in the next 4-5 years (DBS, 2016). Indonesia’s connected population is tech savvy, but the internet penetration is still low at 34% (McKinsey&Company, 2016).

Indonesian economy is about to chase another level of improvement in which banks are having their role within. From this view, the development of Fintech would possibly play an important role, the existence of Fintech will push banking industries to earn digitalisation and automation. In fact, this achievement could cut banking cost to 30% (Nisaputra, 2017). Besides from the additional ‘income’, innovative new product can create a new business model. With the rapid development of Fintech, Banks have to apply a more flexible strategy. The objective is to keep Banking Industries always keep up in every upgraded market. Banking industries indeed will face tense competitions with Fintech, but it’s not shutting the chances that Banks would merge with Fintech as partners (Accenture, 2015). In fact, 84% of Indonesia banks surveyed are likely to invest in technology transformation over the next 3 to 5 years (PwC, 2018).

However, this does not shut the disruptive nature of Fintech. There are cases where digital services providers are disrupting traditional business models. In Indonesia, the transactions using mobile payment in 2016 reaches Rp7.06 trillion (Central Bank of Indonesia, 2019). For example, a local retail, Matahari, has been shutting their branches and starting to develop e-commerce. Online transportation businesses such as Go-Jek and Grab are disrupting the taxi businesses. In Indonesia, the transactions using mobile payment in 2016 reaches Rp7.06 trillion (Central Bank of Indonesia, 2019). Over the next 5 year, PwC (2018) Banking Survey shows that 28% agree to feel some strong significant disruptions in the banking Industry while 52% is expecting a moderate disruption.

Opportunities and Challenges

The big challenge for the existing players is their company culture’s ability to apply more collaborative approach with the new innovators and startups (Accenture, 2015). Accenture reports that blockchain technology might help the world’s largest investments banks to cut their infrastructure costs by between USD 8 billion to USD 12 billion a year by 2025. For example, open source software (e.g., the Tensorflow library to support machine intelligence) has reduced the cost to launch a tech startup, and easily scalable infrastructure such as Amazon, Google Cloud, etc., this allows new entrants penetrate the market and build niche products that target a very specific segment of customers (Gomber et al., 2018). Open Application Programming Interfaces (API) provides access to bank through thirt party digital channels, thus app developers could be profiting from this trend. In McKinsey&Company (2016)’ Global Banking report, some financial institutions who creates their own API such as Citigroup, BBVA Compass and Bank of America, in other words, these banks are pioneering the open banking and see them as a gateway to opportunity into the networked consumer economy.

While going towards the digital economy, Indonesia is still facing shortage in infrastructure technology. Davis et al mentioned about Indonesia’s challenging geographical position to distribute consistent services. Both potentially lead to addressing Fintech flexible services to
fund the small business. SME contributes about 60.3% of total GDP and constitute over 97% of workforce (Florentin, 2016). Along with this, the Indonesian Financial Services Authority (OJK) and the Central Bank of Indonesia has to take the right action to preserve stability and integrity. Besides regulation, The Central Bank of Indonesia established Regulatory Sandbox to test new the innovative products for 6 months.

Both the established incumbents and startups can provide benefits through a collaborative model. From a KPMG’s article by Pollan (2017), Fintech obtains access to a range of important growth drivers such as customers, distribution, data, capital, license, trusted brand and an ability to scale much quicker. Alternatively, established banks gain access to new ideas, solutions and potential investment opportunities with lower cost structures.

3. Research Methodology

Conceptual Framework

To understand the nature of the problem the texts selected for conceptual framework analysis should effectively represent the relevant social, cultural, political, and environmental phenomenon or social behavior, and the multidisciplinary literature that focuses on the phenomenon under study. According to Jabareen (2009), conceptual framework is defined as products of qualitative processes of theorization. One of the chosen methods, literature review, helps the researcher tried to understand financial services industry in Indonesia with the big picture, issues and conteXt from reports, data and previous study.

Zavolokina et al. (2016) defined organizations as the sources of startups and companies that focus on investing in IT supported platforms. Aubrey & Judge (2012) states that the usage of technology has changed customer attitudes and behavior. In short time customers increasingly have more diverse choices and full authority (Hendriyani and Chan, 2018). Customers will demand more engaging websites and mobile applications that are handy, easy and fast. Therefore, Hansen and Sia (2015) claimed that companies should focus on evaluating the technology infrastructure and organizational practices. This issue can affect the eXisting business that has not adapted with the new trends, this is where dynamic capabilities theory relates. Dynamic capabilities is the approach of organizations to develop a specific competences to respond to changes in the business environment that is related to firm’s business process, market position and opportunities (Gizawi, 2014; D. J. Teece et al., 1997, p. 518). In this case, financial institutions have to prepare and invest in digital business strategy and technology strategy priorities to their products and services. Erman (2017) in his research stated that Open Innovation methods can be applied in financial services industry which includes acquisition of assets, partnership and alliances and accelerators in Fintech ecosystem. This highlights the importance for traditional banks to adapt in the new business environment

Figure 1: Flow Framework of Disruptions
Figure 2: Drivers of Fintech in Indonesia Framework

Research Design
Based on the research onion developed by Saunders et al. (2016), this study adopts interpretivism philosophy as the purpose of the research is to create richer understandings and interpretations of social worlds and context (Saunders et al. 2016 p 140), which in this study indicates this phenomenon of financial industry being influenced by digitalization. This means looking at different organizations in the financial industry to seek understandings from different perspectives. The results of the study will be built from collecting primary data and secondary data to explore this phenomenon, identify codes and create categories before establishing final conclusion of the research questions (Saunders et al. 2016 p 145).

The research design will fall under exploratory and explanatory as the researcher conducts a semi-structured interview to understand more about the arising issue, causes and impacts Fintech is having on banks in Indonesia with open questions, which is exploratory. The researcher also wants to seek validity from the users and people with the related background if any impacts are actually detected and happening in the phenomenon and why it can happen, which is explanatory.

Data Collection
The researcher uses literature review, secondary data gathering and primary data collection to help with this study. With the nature of the paradigm, qualitative path is purposed to research the open-ended management research question (Carter, 1999). This paper will need to collect primary data through in-depth interview, in-depth interviews are very helpful as a data collecting tool because it can be used for variety purposes that in this case to identify issue and strategic planning from the real-life perspective that would be more applicable to the real situation (Guion et al., 2011).

For the purpose of this research into the impact Fintech is having on traditional banks in Indonesia, non-probability sampling is used from Indonesian organizations and individuals as the population. Given the size and the scope of the Indonesian Financial Services industry, it is not possible to include and interview every firm within Indonesian Financial Industry, considering also the time and budgetary constraints of this study. There will be 8 to 11 open ended interviews with 8 experts in the fields with different backgrounds and organizations relating to financial services industry and startups in Indonesia and 3 Indonesian financial services customers. Respondents are chosen specifically from different companies and industries in Indonesia related to Fintech based on their position in the firm and experiences in IT or financial services industry.

The analysis can be done through coding and categorizing. In social science research, two
steps of coding have been addressed: a) generating meaningful data units and b) classifying and ordering the units (Alshenqeeti, 2014). Cresswell (2009) assume that analysis process of interview should be reflexive, meaning, there is no fixed method in analyzing interview results, yet, researchers should attentively handle the data as it could affect not only the quality but also validity and reliability. To sum up with the result and conclusion, the researcher will use coding system branched from some categorizes based on the similarity of some codes that have similar or same meanings. Initially, categories will be formulated from research questions. Categories will be added up as the process of categorizing from the data will develop more codes. The next step is formulating the coding system. The coding system will help answering each research questions and fill the missing gap in the previous framework developed by the researcher from only literature reviews and secondary data collection.

4. Findings and Data Analysis

The researcher come up with the categories (Table 1) from the interview and literature review. The need of the interview is to gain real-life insights from experts with financial services background. Interviewees background can be seen in Appendix 2. When asked about the awareness (category no 1) of fintech (Table 1), all respondents provide a comprehensive understanding and segments, issues and areas widely (appendix 3). Appendix 3 is the used coding system developed from the analysis of the interview. The researcher creates a coding system to answer the research questions: ‘Is there any impact Fintech is having on traditional banks in Indonesia?’. According to DailySocial Fintech report in 2018, with the survey conducted in 33 provinces in Indonesia, in 2018 70.63% of Indonesian financial services customer is familiar with the term Fintech and there are 58.14% of respondents who is using fintech services. 62.51% define fintech as online lending services and 56.03% define fintech as payment services.

When asked about the impact to bank’s business model, Appendix 3 shows various business models that are disrupted by fintech such as micro businesses segments because of uninterrupted bank’s code of conducts and Fintech flexibility and efficiency. The literature review shows that consumer behavior has changed in the digital era and tend to use an engaging handy mobile service. The future of financial services in Indonesia lead to the goal of digital economy encouragement. In Appendix 3, banks and fintech tend to collaborate more in the future although in present times disruptions are still the main issue. All respondents agree that Fintech will disrupt in the early stage but will be a supporting innovation to collaborate with existing financial institutions under the supervision and domain of regulators.

The impacts of Fintech are spreading into several segments of traditional banks (see appendix 3).
Table 1 Categories from primary data collection

<table>
<thead>
<tr>
<th>Number</th>
<th>Label of Category</th>
<th>Categories/Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Awareness of Fintech</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Impact of Fintech on bank's business model</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Disintermediation</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Competition in financial services market</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Fintech greatest adoption &amp; growth</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Collaboration between Fintech and Banks</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Disruptive nature</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Impact of Fintech</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Drivers of Fintech and/or Innovation</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Future of Financial Institutions</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Variations of Financial innovation</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Regulatory and Government</td>
</tr>
</tbody>
</table>

5. Conclusions

The literature review and secondary research helps the researcher to develop conceptual framework of the key drivers of Fintech and how it can potentially give impacts on the present incumbents (Figure 1 & Figure 2). From the data analysis and collection, the researcher found that Fintech’s disruptive nature cannot be prevented when penetrating the financial services market. Although with the disruptive nature, when the equilibrium has reached the symmetry point, Fintech and bank will collaborate and work side to side with coopetition based operation. Bank is the enabler while Fintech can be the products, merger and acquisitions would likely to happen in the future. Traditional Banks are aware of the change underway. Competition in the similar market is always encouraged in the economy and is very important, thus collaboration is more likely to happen in the future. The analogical reason behind this is because banks are too big and stable, also somehow is a complementary tool in the country to maintain and push economy development. It is simply because banks have too much knowledge, eXperience, data, liquidity and capital to just collapse when encountering digital services era (Gibson, 2015).

It is important to note that firstly, Fintech will not only affect traditional banks but also the overall economic development in Indonesia. Engagement in Fintech turns out to be highly supported by The Central Bank of Indonesia and Indonesian government. Alongside to strengthening the digital economy, strengthening monetary policy while facing the current policy challenges play a pivotal role. In 2019, the target of Indonesian financial inclusion is 75% of the population (Central Bank of Indonesia, 2019).

Fintech will have a very positive impact (Prawirasasra, 2018) on Indonesia’s economy such as:

i. Assisting domestic financing needs
ii. Boost the distribution of national SME financing
iii. Accelerate financial inclusion
iv. Increase formal account usage for UMKM (Small-medium enterprises)

In a journal that discusses about the long-term effect of digital innovation application on bank performance recognizes the importance of technological change and innovation to be the key
drivers of economic growth and firm performance (Scott et al., 2017), in fact that this Schumpeterian economic theoretical tradition can be valid to the Fintech phenomenon in Indonesia as confirmed by the resources in primary data collection. Lastly, payment and lending segment also are the highlight of emerging Fintech development in Indonesia as from the primary data, the most frequent segment mentioned in the interview is digital payment.

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