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ACCELERATING FINANCIAL INCLUSION THROUGH DIGITAL BANKING

Marchy Tio Pandapotan and Sylviana Maya Damayanti
School of Business and Management, Institut Teknologi Bandung, Indonesia
Email: marchy_pandapotan@sbm-itb.ac.id

Abstract. Financial inclusion is one of key elements in financial well-being concept. However, financial overview of Indonesia shows a gap between current and the goal financial inclusion index targeted by the government. One of the main issues is intermediary facilities and distribution channel. Based on data, financial institutions still have to rely on traditional office branch that turns out costly. This research aims to find a business solution for PT Bank Negara Indonesia (Persero), Tbk., as a financial institution to expand the reach of financial institution to help closing the gap of financial index. Current Reality Tree analysis is used to find the root cause of the low financial inclusion index. Based on the Current Reality Tree analysis, high investment and operational cost are the root causes for the undesirable situation. Digital banking is proposed as a solution for the root causes because it provides more convenience and lower cost than opening branch offices in order to deliver financial services and products. Based on the cost and benefit analysis, digital banking application has higher cost and benefit ratio (2.042) than setting up branch office (1.199). Thus, digital banking application is a more affordable alternative channel to deliver financial services and products.

Keywords: Financial Inclusion; Digital Banking; Financial Services and Products; Banking

INTRODUCTION

Financial inclusion becomes one of the important agendas in the international word after 2008 crisis, especially because of the crisis' impact to those who fall under the bottom of the wealth pyramid and generally unbanked. Based on the result from a survey done by *Otoritas Jasa Keuangan*, Indonesia's financial inclusion index in 2016 has reached 67.8% (Otoritas Jasa Keuangan, 2017). Though it has made the most progress across East Asia and the Pacific, the index still has to achieve the target set by Indonesia's government, which is 75% of the total Indonesia population, in 2019. The government of Republic of Indonesia then composes a comprehensive way consisting six main strategies, called *Strategi Nasional Keuangan Indonesia* (SNKI) to raise the financial inclusion index in Indonesia. One of its main strategies is intermediary facilities and distribution channel of which will be the focus of this research. This research aims to find a business solution for PT Bank Negara Indonesia (Persero), Tbk., as a financial institution to expand the reach of financial institution in certain areas and to help closing the gap of financial index.

Current Reality Tree analysis is used to find the root cause of the low financial inclusion index. Current Reality Tree (CRT) is a problem-analysis tool that examines the cause-and-effect logic behind current situation. Based on the Current Reality Tree analysis, high investment and operational cost comes as the root causes for the undesirable situation. Digital banking software is considered as a solution for this root causes because it provides more convenience and lower cost than opening branch offices in order to deliver financial services and products. To determine this condition, this research compare the cost and benefit of digital banking application with the cost and benefit of traditional branch office. Cost-benefit analysis (CBA) will be used as a tool to estimate and determine the more affordable alternative. Based on the cost and benefit analysis, digital banking software has higher cost and benefit ratio (2.042) than setting up branch office (1.199). The software prototype has also been developed for the initial phase of digital banking software which has feature for opening new savings account.

LITERATURE REVIEW

One of early definitions related to financial inclusion was defined by Leyshon and Thrift (1995) regarding financial exclusion, which refers to those processes that serve to prevent certain social groups and individuals from gaining access to the financial system. According to Sarma (2008) financial inclusion is a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy. Meanwhile, Hanig and Jansen (2010) stated that financial inclusion aims at drawing the "unbanked" population into the formal financial system so that they have the opportunity to access financial services ranging from savings, payments, and transfer to credit and insurance. Financial inclusion is deemed essential because of its implication for the welfare of citizens and also an explicit strategy for fostering faster economic growth in a more inclusive fashion (Sharma, 2008). Moreover, Allen, Demirguc-Kunt, Klapper, and Peria (2015) stated that financial inclusion, as the use of formal financial services, provide beneficial effects for individuals in particular when it comes to the use of bank accounts. Furthermore, the role of banking system in promoting financial inclusion is represented as three basic dimensions of financial

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inclusion index: banking penetration (BP), availability of the banking services (BS) and usage of the banking system (BU) (Sarma, 2008).

Regarding formal financial services, a study conducted by Olyver Wyman (2017), shows that promoting the use of formal financial services continues to be a challenge, as only 18% of adults use a bank account to receive wages or pay utility bills and only 11% borrow from formal sources. Digital financial solutions could play a significant part in closing gaps in financial inclusion because it has the most significant positive impact on financial inclusion in five key areas (Olyver Wyman, 2017):

1. They can enable fast, low-cost, and convenient customer identification and verification processes
2. They can meaningfully alter the economics of the supply side by addressing last-mile distribution and servicing issues through low-cose, widespread, digitally-enabled points of physical access such as mobile phones and point-of-sale (POS) devices
3. They are prevalent throughout the payments value chain and ecosystem
4. They can significantly enhance access to credit by using alternative sources of data, such as payment transactions and telecoms data, as well as analytics
5. Savings can be mobilized digitally through alternative, lower-cost origination and distribution channles and more-convenient product designs.

As one of digital financial services, Dasho, Meka, Sharko, and Baholli (2017), defined digital banking as the incorporation of new and developing technologies throughout a financial services entity, in concert ith associated changes in internal and external corporate and personnel relationships, to provide enhanced customer services and experiences effectively and efficiently. The traditional banks which commit to digital banking undergo digital transformation that boiled to three main phases as stated by Cuesta, Ruesta, Tuesta, and Urbiola:

> *This digital transformation depends on the set of circumstances with which institution starts out, although there are several phases depending on the level of maturity…(i) responding to the new competition by developing new digital channels and products with which to position themselves in the competitive environment, (ii) technological adaptation through in-depth change to the technology platform to convert it into more modular and flexible infrastructure to enable the assimilation of new technologies as well as to speed up the development of new product, and (iii) strategic positioning by adopting digital strategies which involve dramatic changes to their organisational structure.(2015)*

Previous Reserach on Financial Inclusion and Digital Finance

According to Allen et al. (2015), use of formal accounts as a representation of financial inclusion is associated with lower account cost, greater proximity to financial intermediaries, stronger legal rights, and more politically stable environments. Sarma (2008) proposed an Index of Financial Inclusion (IFI) – a multidimensional-index that captures information on various dimensions of financial inclusion such as banking penetration, availability of banking services, and usage. On the subject of the relation between financial inclusion and digital finance service, Ozili (2018) stated that digital finance service has positive effects for financial inclusion in emerging and advanced economics, and the convenience that digital finance service provides to individuals with low and variable income is often more valuable to them than the higher cost they will pay to obtain such services from conventional banks.

METHODOLOGY

This research uses Current Reality Tree (CRT) in order to analyse the root cause of the problem or issue. Current Reality Tree (CRT) is a problem-analysis tool that helps us examine the cause-and-effect logic behind our current situation. The CRT begins with the undesirable effects we see around us and helps us work back to identify a few root causes, or a single core problem, that originate all the undesirable effects we're experiencing (Dettmer, 1997). The CRT tells us what-to-change. There are five key elements of CRT, which are undesirable effects (UDE), root causes, core problems, causality arrows, and assumptions.

In order to propose a suitable business solution, PESTEL Analysis is used to evaluate company's environment. After identifying the root cause of the problem and suggest a business solution, Cost-benefit analysis (CBA) will be used as a tool to estimate and determine whether the solution is more affordable than the current condition.

FINDINGS AND ARGUMENT

In this research, financial institution, in this case a bank, is defined as our system boundary and the targeted financial inclusion index as our goal because this research focused on the intermediary facilities and distribution channel which becomes the responsibility of financial insitutions. After defining the system boundary, the next step is identifying the undesirable effects in the system. After defining the system boundary, the next step is identifying the undesirable effects in the system. Based on the data from World Bank, financial institution account ownership in Indonesia is 49 percent of the total adult. Though it has risen from 2011, this number shows that there is still more than half the adult in Indonesia does not have savings account. Moreover, interviews with the unbanked individuals shows that the people felt low relevance with formal financial product and services as

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they have a strong perception that they can not afford it. As these situations are undesirable situation in the system in order to achieve the goal, they are defined as the undesirable effects (UDEs). The next step in constructing current reality tree is to relate UDEs through a logical chain of cause and effect to root causes. The first UDE is "High Number of Unbanked People". Regarding access, there are two causes of this effect, limited access to the branch office and the preference of people in using traditional office branch. Based on the delivery channel data from OJK, the most delivery channel used is financial institutions offices. However, the people has limitation in accessing the branch office, for example those who live in remote area troubled finding the nearest branch office to access financial product or services. The cause for the limitation in accessing the branch office is because the bank has not been able to cover Indonesia thoroughly. This fact can be seen from the distribution of bank's branch offices in Indonesia (Table 1).

Table 1. BNI's branch offices distribution per region in 2017

Region	Branch Office	Sub-Branch Office	Cash Office	Population
Sumatera	47	203	108	55,519,600
Jawa	96	601	365	149,604,000
Kalimantan	21	70	59	15,924,100
Bali, NTB, NTT	9	86	7	14,489,400
Sulawesi, Maluku	22	108	37	22,173,200
Papua	11	79	43	4,180,600

Based on the data, most of the branch offices are in Sumatera and Jawa, as it makes sense to target the region with the most population. But, why does not bank open in all areas in Indonesia? It is known that to open a branch office, bank has to invest as much as IDR 1 billion – 10 billion per office. This high investment cost makes bank reconsider whether the branch office will be profitable or not. For the second UDE, low awareness of financial service benefits, may be caused by the disinterest with financial institutions such as bank as a result of the perception from the people that they can not afford the the formal financial services or products from bank. Administration fee, minimum savings amount for deposit, and high interests for loan product may cause people prefer to manage their own money rather than using the bank. What makes the amount of fee and the rate of loan interest become expensive? In 2017, the ratio between operating expense the operating income for BNI is 61 percent while average ratio of Southeast Asia banks is between 50 - 60 percent. As there exists high ratio between operating expense and operating income, bank set higher loan rate of interest in order to gain more revenue. Therefore, the high operating expense causes of the operational inefficiency of the bank that is shown by the ratio of operating expense to operating income. Based on the current reality tree analysis, there are two facts that becomes root causes for the UDEs that has been defined, they are: high investment cost of opening new branch office and high operational cost for the bank. This root causes show what to change in the system boundary.

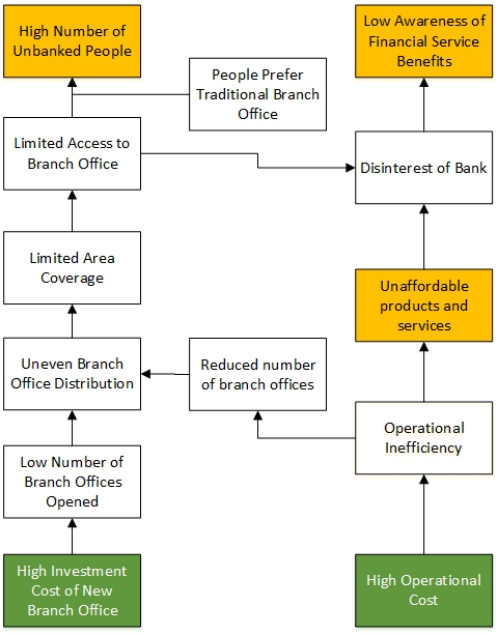

Figure 1. Current Reality Tree Analysis

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A digital banking applicaton is offered as alternative to deliver banking services and products because, as stated by Ozili (2018), digital finance service provides more convenience to individuals with low and variable income than conventional banks. Based on analysing factors that affect the delivery of financial services or products in regards to financial inclusion, the requirements for the digital banking application are:

1. It is used to deliver banking services and products. (SR-01)
2. It is mobile-based and internet-based. (SR-02)
3. It has to comply with the regulation issued by the authorizing institutions. (SR-03)

The digital banking application is meant to be a more affordable alternative to deliver banking product or services than a traditional branch office. To determine this condition, this research compare the cost and benefit of digital banking application with the cost and benefit of traditional branch office. Cost-benefit analysis (CBA) will be used as a tool to estimate and determine the more affordable alternative. In estimating the cost, the first step is identifying costs in advance or overall cost of each alternative. After that, the benefit of each alternative is identified. The benefit of the branch office comes from the revenue of a branch office which are interest income, administration fee, and provision. For the digital banking, the revenue is assumed the same as a branch office, because the digital banking software will substitute the offline branch offices. After identifying the cost and benefit of each alternative, discount rate is applied to calculate the net present value of the options compared. Based on the calculation, the result is:

Table 2 Cost Benefit Analysis Summary (in IDR)

		Branch Office	Digital Banking
Total Benefit		14,276,619,564	14,276,619,564
Total Cost		11,907,104,371	6,990,213,722
CB Ratio		1.19900012	2.042372398

CONCLUSIONS

A digital banking software is intended to have all functionality that branch offices have. In this research, for five years of estimation, a digital banking software's cost is estimated for IDR 6,990,213,722, with generating benefit as much as IDR 14,276,619,564. Therefore, compared to opening a new branch office that costs around IDR 11,907,104,371 per office for five years of estimation, a digital banking software generates higher cost and benefit ratio, 2.042, than setting up traditional branch office, 1.199. Moreover, the initial investment cost of the digital banking is more affordable than setting up traditional branch office. It is also important to consider that the digital banking software is able to substitute more than one branch offices. Therefore, digital banking software is as an affordable alternative to deliver financial services and products.

Moreover, analysing factors that affect the delivery of financial services or products in regards to financial inclusion resulted with requirements for the digital banking application as follow:

1. It is used to deliver banking services and products. (SR-01)
2. It is mobile-based and internet-based. (SR-02)
3. It has to comply with the regulation issued by the authorizing institutions. (SR-03)

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