

# Role of Fintech Services Providers and Stakeholders as Drivers in Digital Payment Ecosystems

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Abstract: The development of digital finance (fintech) sector in Indonesia brings demand and potential which is managed by local fintech startups through various forms of creative services. There are role of providers and stakeholders in market acceptance. However, their roles in the fintech ecosystems are not documented systematically. This paper will answer the question about the roles of the provider and stakeholders in encouraging the use of digital payment services. This paper focuses on the context of their roles and behaviour in the development of the digital payment environment. This paper is library research compiling previous studies of fintech models using the example of electronic wallets (e-wallets). Our literature review results conclude that the Indonesian payment services market has very large opportunities especially for non-cash payments systems such as e-wallets. In addition, the underlying demographic and economic drivers have also led to rapid change. Indonesia has experienced a massive development of cashless payments, and we believe bigger opportunities are available for local fintech companies through their alternative payment platforms.

## 1 INTRODUCTION

Fintech companies have developed various financial and transactions services such as electronic wallets, mobile payment services, and also other financial services and products (Weichert, 2017). As Indonesians entering the online society, there is a global trend of business actors using digital payment activities (Lewis, 2017). It becomes a challenge for providers and stakeholders to provide adequate and safe non-cash payment instruments to gain community trust (Górka, 2012). The involvement of finance service providers has changed the digital payment ecosystem that influences all stakeholders and their interests such as the central bank, retail consumers and transportation companies (Liu et al., 2015). In addition, the development of digital transactions also raises demand scenarios that need to be managed by fintech startups producing various forms of creative services (Oshodin et al., 2017).

However, the information about their roles, models and best practice schemes are not well defined or documented. This paper describes the roles and behavior of finance service providers in relating to

other stakeholders based on the information from the mainstream financial services. In addition, this paper will also describe the process of several digital transaction schemes in recent years including the feasibility of product acceptance and roles of trusted third parties. Thus, this paper also describes various technological features, aspects and the efficiency of payment services to shape the financial market infrastructure (FMI) environment.

### 1.1 Research questions

1. What are the roles of the provider in providing safe, relevant and innovative payment instruments that form the digital payment ecosystem?
2. What are the roles and tendencies of consumers to accept digital payments for digital retail payments as a shopping payment instrument?

3. What are the roles of regulators in regulating digital payment services and standardization of the payment instruments?

### 1.2 Significance of the study

Theoretical writing is expected to add insight and understanding of the operation of business activities in fintech business models such as payment gateway providers and e-wallet providers based on Bank Indonesia Regulation No. 19/8 / PBI / 2017 concerning National Payment Gateway.

This research is beneficial for the community as well as for students because with this research can provide insight and contribution of thought regarding the implementation of business activities in fintech business models such as payment gateway providers and e-wallet providers. For this research manager, it is useful to contribute ideas to answer challenges for providers and stakeholders to provide adequate and safe non-cash payment instruments to gain community trust.

## 2 LITERATURE REVIEW

Many studies have looked at the use of digital retail payment instruments, privacy in digital payment transactions, the role of providers in system decentralization and crypto currency (Gomber et al., 2017; Grimes & Rodima-Taylor, 2017). This section provides a summary of the role of customers (users) and their readiness to accept the fintech services.

### 2.1 Fintech Potential in Indonesia

“Financial technology” or “FinTech” refers to the use of technology to deliver financial solutions. FinTech today is often seen as a uniquely recent marriage of financial services and information technology.

In the past five years there have been more and more fintech and non-bank startups entering and shaking the payment arena (Arner et al., 2015), taking advantage of new technologies and market conditions (Brekke & Hagerud, 2017), and utilizing alternative business models substituting conventional traditional payment services. which are summarized in Fig. 1.

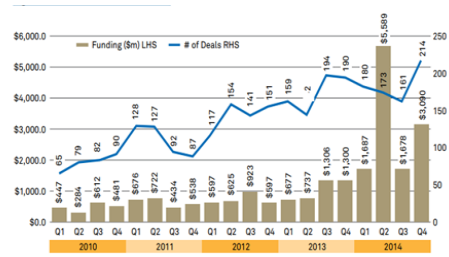


Figure 1. Global Investment in Fintech

This trend was triggered by the high growth of investment into the fintech sector (see Fig. 1) which was dominated primarily by venture capital, private equity, and angel investors (Gabor & Brooks, 2017). For comparison with other countries, last year in the US fintech investment nearly tripled, and the enthusiasm for such innovations appeared throughout the world (Arner et al., 2015; Chiu, 2017; Gabor & Brooks, 2017). London, San Francisco/, Silicon Valley and New York have established themselves as a major centers for innovation and are quickly followed by new innovation centers around the world (Hodell & Nilsson, 2016; Weichert, 2017). Amsterdam, Stockholm, Paris, Berlin and Dublin, for example, have all been identified as key growth areas in the European fintech ecosystem, and are complemented by sectors that develop in locations such as Tel Aviv (Bofondi & Gobbi, 2017; Románova et al., 2018).

In Indonesia, there is high growth of e-economic providers developing their own payment services (Lapeyre et al., 2015; Leimona et al., 2015). For now, the most interesting seems to be 'HelloPay' (from Lazada group, an eCommerce site recently acquired by Alibaba Group) and Go-Pay (from Go-Jek group, an online travel group with other eEconomy offers). Indonesia is following a different payment development path to other global markets, due to the low adoption of credit cards (Hidayanto et al., 2015). Even though most people do not have bank accounts and credit cards, the population has adopted different behaviors to use alternative mobile ePayments besides addressing legacy infrastructure problems. The users of fintech services are described in Fig. 2.



Figure 2. Fintech users in Indonesia

The development of the fintech sector has affected all other non-financial services industries, such as banking, capital markets, payments, insurance, wealth management and real estate (Arner et al., 2015; Weichert, 2017). Such a leap into digital behavior also impacts industrial systems and infrastructure platforms in IT manufacturers. Even though the agglomeration of technology and financial services is not new in Indonesia, the application of IT for financial services has been presented and focused on industrial innovation efforts, technology infrastructure and system security, stability and resiliency (SSR). This growth is very important for effective industrial operations. Thus, more contemporary fintech companies have released their creative applications in the past ten years, enabling the delivery of new and innovative services to support other industries as new business models (Jang et al., 2017; Hodell & Nilsson, 2016). The business models, especially the digital platforms, always involve electronic money (e-money) and also digital non-bank accounts to collect and deposit payments. The development of e-money is explained below.

## 2.2 E-Money

Digital retail payment instruments (e.g., as e-money, e-wallets) have become a challenge for both providers and stakeholders (Masihuddin et al., 2017). They have to understand the role and key characteristics of digital money (O'Neill et al., 2017). Many governments and legislatures try to frame the potential role of digital money as an exchange and storage media that allows economic actors to transact with each other. For the purpose of exchange, digital money can be like physical money as a payment instrument between parties. With emerging cryptocurrency technology, innovation in digital currency has become more widespread creating challenges for providers and stakeholders (Fung & Halaburda, 2016; Raymaekers, 2015). They have to manage and educate their customer perceptions of the use of payment and digital product security.

With the existence of digital networks, digital money can be transferred across all digital networks and move across industries. In addition, the existence of the underlying infrastructure for storing and distributing content applications and services also influences the context of digital retail payments (Wandhöfer, 2017; Hasan et al., 2015). To understand the problem, we provide an exemplary solution from Europe case study with legal tender Euro banknotes and a non-interest obligation to the ECB as digital retail payment instruments. The legalization of Euro

banknotes provides an example about how the problem of e-money can be resolved through certain agency directives such as the European E-money Directive (Dehghan & Haghghi, 2015; Vlasov, 2017)).

Table 1: Characteristics of currency, digital money\*, checks, and debit cards

Characteristics	Digital money	Currency	Check	Debit card
Legal tender	No	Yes	No	No
Acceptability	?	Widespread	Restricted	Restricted
Marginal cost per transaction	Low	Medium	High	Medium
Payment finality face-to-face transaction	Yes	Yes	No	No
Payment finality non-face-to-face transaction	Yes	No	No	No
User-anonymity	Yes	Yes	No	No

## 2.3 E-Money as a Cryptocurrency Platform

E-money has been used as a new platform of cryptocurrency as a new trend. Electronic currency is an asset which can change hands from one person to another and is evidenced by a balance that the owner of the currency keeps and the transfer is final without the intervention of a bank (Dwyer, 2015). For example, when cryptocurrency continues to grow as indicated by Bitcoin's popularity in 2009, many providers and stakeholders felt challenged to support personal crypto currency (Raymaekers, 2015; Narayanan et al., 2016).

To make cryptocurrency a payment instrument, there is a need to get support from an authority or a centralized system. The whole process takes place peer-to-peer based on computer code where cryptographic data is guaranteed (Raymaekers, 2015). Data containing information about the money is exchanged peer-to-peer similar to physical cash. In addition, national boundaries or a regulatory framework are important to standardize ubiquitous payment solutions in order that the cryptocurrency instrument can move freely in the global digital ecosystem (Chuen, 2015; Liu et al., 2015).

## 3 METHODOLOGY

This type of research is library research collecting a series of studies relating to previous studies about

fintech. This study also compares the data, models, and best practice about the fintech users, customers, and stakeholders. We collect information from various sources (e.g., books, encyclopedias, scientific journals, newspapers, magazines, and documents). A library research or systematic literature review is a research activity that critically reviews the knowledge, ideas, or findings contained in the body of academic-oriented literature. It also formulates its theoretical and methodological contributions to the topic of fintech and stakeholder roles. The focus of this library research is to find out the development of the fintech industry, e-money, e-wallets and their development in Indonesia. The nature of this research is descriptive analysis, which is the regular decomposition of data that has been obtained, and then gives understanding and an explanation so that the reader can understand it well.

## 4 DISCUSSION

### 4.1 Fintech Users in Indonesia

The development of the fintech sector in Indonesian e-commerce is currently similar to the Chinese market in 2008 (Chuen & Lee, 2017). The Indonesian fintech market has experienced a high growth indicated by the high uses of fintech products, such as GoJek's Go-Pay payment and InnoPay's wallet platform.

Unsurprisingly, cash-on-delivery (COD) still accounts for more than 70% of all transactions that are processed based on data by ecommerceIQ (Google Trends, 2017).

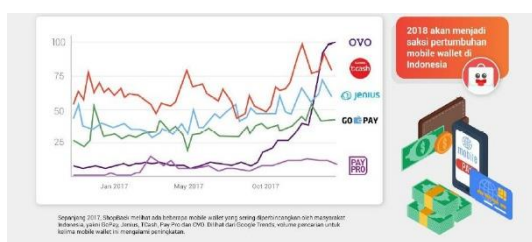


Figure 3: Trends of transactions processed through fintech services

Those who focus on cellphone wallets like True Money of Thailand struggle to achieve sustainable "core product values" and reach the masses (Goswami, 2016). In addition, OVO from Lippo also collaborated with Grab, enabling the ride-hailing

company to offer GrabPay to its users (Plooi & van Driel, 2016). Go-Jek also continues to expand its influence in the field of mobile wallets by acquiring three companies engaged in financial or fintech technology (Hoontrakul, 2018; Plooi & van Driel, 2016).

Such cooperation between companies to offer mobile wallets also drives the success story of mobile wallet (Dai et al., 2018; Er-Rajy et al., 2017). However, long-term success will depend on the readiness of the community to adopt it. Fintech business seems more promising than their transportation services (Hoontrakul, 2018; Plooi & van Driel, 2016). Some observers have suggested that the benefits of the fintech business are quite large and the costs and risks are smaller (Bofondi & Gobbi, 2017). There are many examples of such cooperation in offering mobile financial services such as GrabPay, Kudo, and Go-Pay. They are explained in the following paragraphs.

The consumers in Southeast Asia who hitch a ride from a taxi or personal driver tend to do it through Grab, the region's answer to Uber or Lyft. But the irony of the ride-sharing boom is that, in providing a long-awaited modernization of the way the driver receives payment, s/he attempts to promote cashless payments even though the cash option is still in process (Hoontrakul, 2018; Plooi & van Driel, 2016).

Kudo, a Jakarta-based fintech, brings cash options to the forefront for those who shop online. Consumers without a bank account or card can use Kudo to buy goods or services online, and then make cash payments to local Kudo agents.

The Kudo network consisting of 4,000 agents covering 500 cities and regions throughout Indonesia and has more than 5 million active customers (Rintamäki, 2017). This is a model similar to Amazon Cash that was recently announced, as well as older offers such as PayPal MyCash Card, or PayNearMe.

According Grab's website, Grab claims GrabPay's cellular payment service is growing and Grab has a 95% market share in the rising transportation industry in Singapore. In acquiring Kudo as part of the overall "700 Grab for Indonesia" master plan of 2020, the company is trying to bring financial inclusion to the forefront through its various mobile payment offerings.

"Indonesia is one of the most promising and fastest growing e-commerce and non-cash payment markets in Asia, but there is a clear need for a more flexible and customized cash payment solution," said Ming Maa, president of Grab (Rintamäki, 2017).

About 175 million Indonesians are classified as middle class, but the majority of people do not have

bank accounts, especially in non-urban areas, said Maa. “Kudo has created a truly unique solution to the challenge of serving this huge and underserved market.”

At present, Grab users have a wide selection of online vendors to choose from including GrabTaxi or GrabCar, or they can have GrabPay on their mobile with a card or account connected to make payments at participating retailers. Top-up options such as GrabPay Credit and a loyalty program called GrabRewards are available where points are obtained for each Grab trip.

“GrabPay represents a huge market opportunity, and that is something we think we are uniquely positioned to bring to the Indonesian market” (Schechtner & Hanson, 2017). In all regions, there is still great potential for payment solutions without money to increase from their small scale today.

The cooperation between Ovo and Grab has been running for one month. Ovo and Grab users can make payments for GrabFood transportation and food delivery services using Ovo integrated into the Grab application.

GrabPay and Go-Pay service valuations will continue to increase. Gojek already officially inaugurated Go-Pay as a fintech and obtained an operating license from Bank Indonesia (BI). Now the move is followed by Grab by inaugurating GrabPay as a fintech service. GrabPay has officially become a fintech and has received operating permission from BI. Grab works with Ovo e-money service providers for financial transactions. GrabPay is not only used to pay for Grab services only. Now GrabPay can be used to pay for parking fees, hospital bills and others that are integrated with Ovo.

## 4.2 Fintech Ecosystem in Indonesia

Progress in developing the digital payment ecosystem depends on all stakeholders working together so that private and public sector leaders can align with common interests (de Reuver et al., 2015; Chuen & Lee, 2017). Since the good practices for the development of digital payment systems are still emerging, customers’ needs guidance to support the process by identifying and explaining component parts of the inclusive digital payment ecosystem (IDPE) and ways to address key challenges for its implementation.

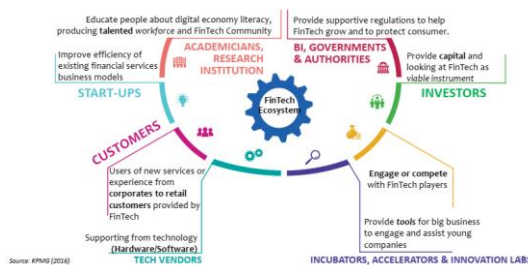


Figure 4: The digital payment ecosystem in Indonesia

Digital financial services provide substantial opportunities to advance financial inclusion quickly (Gabor & Brooks, 2017; Chuen & Lee, 2017). Digital solutions enable safe and cost-effective designs and the provision of financial services and products. These business models can sustainably serve households that are financially underserved and underserved and small and medium enterprises (SMEs) (Chuen & Deng, 2017; Rintamäki, 2017).

Payment is usually a point of entry in the use of financial services, for example, through receipt of remittances or transfers of social benefits. The initial use of financial services by groups previously excluded is often through digital services. Digital payment systems have the potential to lead people who do not have bank accounts to access other formal financial services, as evidenced in the GPMI Market and Payment System Subgroup Inventory Reports. Therefore, developing an inclusive digital payment ecosystem is the key to providing basic banking services for those who are financially excluded and as a springboard to provide access to other financial services.

Supporting universal access to and often using transactional services is very important in the realization of the potential of an inclusive digital payment ecosystem to increase the level of financial inclusion. The Committee on Payments and Market Infrastructure and the 2016 World Bank Group Report Aspects of Payment for Financial Inclusion (APFI) provide seven guiding principles for increasing access and use of transaction accounts (Zottel et al., 2017; Garg & Agarwal, 2014). These principles are supplemented by several main actions to support universal access to, and often use, transaction accounts. The goal of universal access and frequent use is on four catalysts (product design, available access points, financial literacy and awareness, and utilizing large amounts of payments), supported by three foundations (financial infrastructure and Information and Communication Technology (ICT), legal and regulatory framework, and public and private sector commitments).

An inclusive digital payment ecosystem consists of several building blocks and a supportive environment. Building blocks of such ecosystems include:

1. Digital payment service providers (banks and non-bank payment service providers, including cellular money operators);
2. A payment system that is part of the financial infrastructure;
3. Distribution systems (or access channels and lines, including agents and direct digital access);
4. ICT infrastructure and energy; and
5. An effective user identification system.

A supportive environment consists of a legal and regulatory framework with central banks that usually play a key role, combined with a framework that increases user awareness, financial literacy, and consumer protection measures, all supported by commitments from the public and private sectors to increase the level of financial inclusion (Garg & Agarwal, 2014). The development of a digital inclusive payment ecosystem payment system must directly support this increase.

### 4.3 The Role of Payment Regulator

The rapid growth of fintech has attracted greater regulatory scrutiny, which is certainly warranted given the fundamental role FinTech plays in the functioning of finance and its infrastructure (Arner et al., 2015).

There are challenges faced by regulators for digital retail payment transactions. The regulators must have system technology development accompanied by operational and technology regulations and proposals and implementation of payment solutions based on e-money models. At the global level, privacy and security continue to be the main focus of the Anti-Money-Laundering (AML) rule. The rule has been making innovation more difficult since the providers must follow the regulation (Serhan et al., 2016; Kolhatkar et al., 2014).

Regulators must be prepared to watch how the fintech companies follow the banking laws as we get to know the newly-defined third-party providers (TPP) (Bowers et al., 2017; Polasik & Piotrowski, 2016). It is permitted by this law to access information on payment accounts of customers holding their payment accounts in Account Assistance Payment Service Providers (AAPSP). Credit institutions or e-money AAPSP institutions can also act as TPP services such as for initiation of

payments and account information. They can insert themselves into a broader digital economy where the API can be used as a tool to enable account-related data transfers between AAPSP and third parties. The opening of a payment account opens the opportunity to develop new services around payments and the power to make the bank accounts a central payment instrument.

The fintech providers must permit the regulators to provide legal guarantees and consumer protection through AAPSP and their customers. Currently it is still an open question regarding the interaction of PSD2 and EU General Data Protection Regulations4 (GDPR) 2016/679 and 'explicit approval' questions. Given the fact that under PSD2 customers can directly provide and withdraw approval for TPP in terms of each service they provide (Románova et al., 2018). There is no formal requirement for either the customer or TPP to inform AAPSP that according to AAPSP regulations it will require a legal guarantee from the European Commission that they will not be fined under data protection laws if they are (Románova et al., 2018).

## 5 CONCLUSION

As this report clearly illustrates, the opportunities for non-cash payments in Indonesia are vast. However, the Indonesian fintech has not entirely adopted the regulations. Since the Indonesian market has different demographics and economic drivers, the fintech must prepare for rapid change from cash-based payments to digital payments through mobile devices because the emerging young middle class embraces new ways to pay.

The Indonesian population seems to be on the verge of an explosion of cashless payments, and we believe there are significant opportunities for companies that want to invest in the alternative payment platforms. Many of the players set out in this report have used significant resources to spearhead new solutions to overcome barriers in low proportion markets such as lack of infrastructure and other infrastructure.

## 6 LIMITATION OF THIS STUDY

This paper focuses on the context of the roles and behavior in the development of the digital payment environment. In conducting research, the author has limitations where the study focused only on one type

of fintech, namely payment gateway. So, the results of the research cannot be generalized, because fintech consists of various type. Besides that, the current regulations are keep changing and still not binding. So, for future research, it is better to add more references about regulations and laws which are the basis for this fintech payment gateway.

Rapid technological development, making startups compete to create creative and innovative financial services. Many forms of fintech such as: lending, financial planning (personal finance), retail investment, crowdfunding, remittances, financial research, and others. So, in future research can focus on other forms of fintech, because there is still a few research on fintech, especially in Indonesia.

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