



Government Digital Payment and Marketplace (Digipay) in Indonesia: Problems and Solutions

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Abstract. The Ministry of Finance through the Directorate General of Treasury enacted a Money Supply (UP) policy through the Digital Payment and Marketplace (Digipay) mechanism on the work unit which aims to provide an efficient and effective payment system for government goods/ services expenditures, encourage efficient management of state finances and improve the quality of state treasury management. Digipay policy is currently still in the piloting stage, thus, not many researchers have studied this policy in Indonesia. This study aimed to provide a detailed overview of the Digipay policy as well as identify the problems and alternative solutions for the implementation of the policy. It used literature review methods, while using secondary data in the form of academic texts of government marketplace policies, regulations from the Director General of Treasury, and literature studies from various domestic and foreign journals considered relevant for analyzing Digipay policies. The analysis was carried out using Dunn's policy analysis consisting of: definition, prediction, prescription, description, and evaluation. The results of this study showed that the Digipay policy presents advantages in terms of effectiveness, efficiency, simplicity, and transparency, while having limitations when it comes to transaction security, uneven internet network distribution in Indonesia, inadequate human resources, and platform exclusivity. Furthermore, the authors provided alternative solutions to those problems, namely: increased transaction security assurance, provision of adequate internet network, HR training, and innovation in the flexibility of use.

Keywords: Government · Digital Payment · Marketplace · Digipay

1 Introduction

The digitalization of public services is currently occurring at a rapid rate around the world, including Indonesia. To tackle many challenges of digitalization, the government has undertaken various digital initiatives and innovations across different areas, including in state financial management. Efforts made by the government include building an Integrated Financial Management Information System or IFMIS which is a model for digitizing state finances. IFMIS was first used in Indonesia in 2011.

IFMIS is a computerized arrangement used by the government to plan, execute and monitor the government budget. In its use for state budget and treasury management,

it is supported by two applications, namely State Treasury and Budget System (SPAN) and Agency Level Financial Application System (SAKTI) [1]. Furthermore, Siallagan described SPAN and SAKTI as the two connecting point frameworks used to handle the state budget payment procedures in Indonesia. In addition to, SPAN and SAKTI, the government is also developing a Digital Payment and Marketplace Program or commonly known as Digipay.

Digipay is an application system built by the Ministry of Finance for digital payments for state spending using Government Credit Card (KKP) and cash management system (CMS) virtual account. In this case, the Ministry of Finance cooperates with the Association of State-Owned Banks, particularly BRI Bank, BNI Bank, and Mandiri Bank. There two elements to Digipay, namely a work unit for managing the state budget and a provider of goods/services based on an account at the same bank. The legal basis for implementing Digipay is the Regulation of the Directorate General of Treasury Number PER-20/PB/2019 on the Use of Money Supply through Marketplace and Digital Payment Systems in Work Units. Money supply (UP) is a down payment for work unit spending treasurers to finance work unit operational activities or to pay expenses whose nature and purpose are not possible to be paid with the Direct Payment Procedure (LS) [2].

The strategic objective of this Digipay policy is to provide an effective and efficient framework for the payment of government goods or services, so that state budget financial management can be carried out efficiently and the quality of state financial management can be improved. This strategic objective can be realized considering that literatures on financial technology suggest that digitization enables financial transparency by improving business records and lowering transaction costs [3]. Cash-based payment processes also carry a number of risks, including potential money loss, late payments, potential fraud, expensive storage costs, slow approval processes, potential for fictitious payments, as well as high administrative costs related to the procurement of office stationery and processing costs in providing cash.

The authors see this government's digital payment and marketplace policy from the perspective of public policy analysis. Public policy analysis as an applied social science discipline, which uses a variety of exploratory and argumentative techniques to create, modify important data used in a particular political sphere and deal with policy issues, is also a scientific and practical activity that aims to create, evaluate, and convey information about and in the policy process [4]. Policy analysis can also be defined as methods to identify options related to various complex problems (Dror in Wahab [5]). Moreover, Wildavsky described policy analysis as a study of public policy which means combining and contextualizing models and research from these disciplines that contain the direction of issues and strategies (Wildavsky in Parsons [6]). From some of these expert opinions, it can be concluded that public policy analysis describes the activity of synthesizing information to provide recommendations, options or public policy designs for innovation or policy reform.

Currently, the use of UP with the Digital Payment – Marketplace payment system in the Ministry/ Agency Work Unit is in the trial stage. Data from the Directorate General of Treasury in 2020 showed that the outcome development of Quickwins Piloting of the use of UP with the Digital Payment and Marketplace payment system in the Ministry/

Agency Work Unit has only reached 55%, thus, acceleration efforts are needed to improve the quickwins achievement. Therefore, in-depth analysis is needed on this policy in order to improve and achieve the objectives of the policy.

This study aimed to provide a detailed overview on the Digipay policy as well as identify potential issues and alternative solutions to this policy. The Digipay policy in Indonesia is a relatively new policy and there have not been many studies examining it in Indonesia. The results of this study are expected to provide further insights and become practical contributions for the implementation of an effective and efficient state budget management policy.

2 Methods

The method used in this study was literature review. Literature review summarized and evaluated a collection of writings on a particular topic in order to obtain an overview of existing research, reveal well-made research, provide new ideas for future research, help find problems or deficiencies in existing research, and generate new conclusions as stated by Knopf on 2009. The data used in this study were secondary data in the form of academic texts of government marketplace policies, regulations from the Director General of Treasury, and literature studies from various domestic and foreign journals considered relevant for analyzing Digipay policies. The authors used a qualitative descriptive analysis technique to obtain a detailed overview on the implementation of Digital Payment and Marketplace policy in Indonesia. They also utilized problems in the use of electronic payment systems in other countries as a reference to identify problems and alternative solutions to problems that occur in Indonesia.

This study used William N. Dunn's model. Dunn's policy analysis method is a combination of five general methodologies commonly used in critical thinking, namely: definition, prediction, prescription, description, and evaluation [4].

3 Findings

Based on Dunn's policy analysis, which includes definition, prediction, prescription, description, the following results were obtained:

3.1 Definition

The implementation of KKP and VA (Virtual Accounts) became the basis for the development of the Government Digital Payment and Marketplace (Digipay) in Indonesia, where piloting of Digipay was based on the Regulation of the Director General of Treasury Number PER-20/PB/2019 regarding Trial of Use of UP through the Marketplace and Digital Payment System in Work Unit. This piloting of Digipay has been implemented since 2019. In the 2019 to 2020 period, there were 4 trial stages. The first phase of the trial began on November 25, 2019, involving 10 work units within the Directorate General of Treasury and 3 commercial banks. The second phase of the trial began on January 6, 2020, involving 9 work units within the Directorate General of Treasury. The

third phase of the trial began on March 2, 2020. The fourth phase of the trial began on October 1, 2020, involving 241 work units outside the Directorate General of Treasury.

Based on the official memorandum of the Directorate General of Treasury Number S- 558/PB.3/2019, there are 3 commercial banks that are piloting the use of UP through the marketplace and digital payments, namely BRI Bank with the GovStore application, BNI Bank with the DigiPro application, and Mandiri Bank with the BlanjaMandiri application. In their developments, GovStore changed its name to DigiPay002, DigiPro changed its name to DigiPay009 and BlanjaMandiri changed its name to DigiPay008.

In the use of DigiPay for government spending on goods/services, there are 9 authorities: Proxy for Central State Treasurer (BUN), Proxy for Regional BUN, Authorized Budget User (KPA), Commitment Making Officer (PPK), Procurement Official, Recipient of Goods and Services or PPK staff, Expenditure Treasurer, and Goods/ Services Provider. The mechanism of using a marketplace according to the Regulation of the Directorate General of Treasury Number PER-20/PB/2019 is as follows: 1) The orderer looks through goods or services in accordance with the Work Unit's needs on the catalog in the marketplace; 2) PPK verifies the order of goods or services made by the orderer; then approves the order for goods or services and may also provide a note of approval according to the results of the verification and then appoints or selects a Procurement Official for further processing in the marketplace system; 3) The Procurement Official makes a request to the provider of goods or services to provide goods/services; 4) Goods/ Services Providers can accept or reject orders for goods/ services from the Procurement Official; and deliver goods/ services to the address according to the order; 5) After the goods are received, the Recipient of the Goods/ Services or PPK Staff scans the code of evidence for the goods or services sent by the provider of goods or services; check the correctness of the quantity and quality of goods or services.

The mechanism of using Digital Payment as set out in the Regulation of the Directorate General of Treasury Number PER-20/PB/2019 is: 1) Orders for goods or services that have been approved and received by the recipient of the goods/ services or PPK staff will be the basis for the issuance of invoices/ receipts as accountability for the use of UP; 2) Based on the bill/ receipt, the expenditure treasurer then makes digital payments; 3) Payments with KKP are made after the goods/ services are declared to be received, payments with KKP are made by the Procurement Official; 4) Payment using a Debit Card/ CMS is carried out after the goods/services are declared received and can be paid on a scheduled basis; payments by Debit Card/ CMS are carried out by the Expenditure Treasurer.

Based on the elaboration above, it can be concluded that the Policy on the use of UP using DigiPay in the work unit has a clear and consistent standard operating procedure. This needs to be supported by the understanding of the DigiPay implementers of the procedure so that the policy can be implemented properly.

3.2 Prediction

The Implementation of DigiPay in the use of UP of work units is expected to be able to be conducted in all work units in Indonesia. That way, a wider DigiPay ecosystem can be established and encourage the country's economic growth. In addition, it is hoped that the use of Marketplace and Digital Payments can reduce the number of corruptions

in Indonesia, because cross-country observational studies have identified digital technology as an important factor in reducing corruption. The reason for considering digital technology as an instrument to reduce corruption is based on the principle of financial transparency [3]. This is because digital payments eliminate the need for physical and face to face interactions between transacting parties and digital payment tracks are recorded in the banking system.

The benefits of technological advances contribute to the development of the payment ecosystem, this will help the country in significant cost savings by reducing the use of cash and help the government to cover tax leakage by increasing accountability [7].

3.3 Prescription

Along with technological developments, the trend of online shopping will grow and become an alternative choice for budget managers in Work Units. The various conveniences offered will increase the performance of budget managers. These conveniences include an integrated digital payment system with electronic procurement procedures on the same platform, spending on government goods/ services can be done anytime and anywhere, saving time, and integrated tax payment process. In addition, for Micro, Small Medium Enterprise (MSMEs) or vendors, by utilizing the marketplace to sell products, their business can grow faster than selling conventionally.

The best driving factors for digital payments are trust, perceived security and perceived benefits [8]. For this reason, in terms of this policy, efforts are needed to increase user confidence in the security of its use and disseminate the benefits of its use to users. This can be achieved by holding a massive outreach to users regarding the technical use of Digipay.

In conventional card-based payments, users may leak customer details to merchants which could potentially lead to fraud, customer profiling and impersonation [9]. Digital payments can be made using KKP, thereby the risk of user data leakage or breach needs more attention. Governments, regulators and policy advocates need to improve countries' data protection and privacy practices to reduce the risk of data misuse and ultimately regain the trust of their citizens and the rest of the international community [10].

In line with Szumski's opinion, country data privacy security in Marketplace and Digital payments should be improved. In addition, security issues that often arise in the use of online banking are: (1) Passwords, where most customers use easy-to-remember passwords that can be easily guessed or deducted by hackers which is the most repeated security breach in online banking. (2) Fraud, this method is commonly used by hackers where they trick customers into giving their information voluntarily. The scam is carried out using phishing emails where the hackers disguise themselves as bank employees. (3) Keylogger, that is type of malicious software in which keystrokes are recorded by software which allows hackers to capture passwords while typing them [11].

Biometric authentication systems using the physiological and behavioral characteristics of individuals are very effective and efficient for use as automatic access control and identity verification. The unique characteristics of the human body are very difficult to imitate, making biometric technology security systems difficult to penetrate [12]. This biometric authentication system can be adopted to overcome problems in the use of Digipay by utilizing fingerprints, faces, or voices.

3.4 Description

The use of Marketplace and Digital Payments in government spending requires an internet connection, while not all regions in Indonesia have an adequate internet connection. In terms of residence location, living in rural areas decreases the probability and opportunity of using digital payment systems compared to living in areas with sufficient internet access [13]. The internet plays a very important role because all users need an internet connection to use the Marketplace and Digital Payments. The importance of Internet access and digitization was even more evident during the pandemic crisis when the government imposed a lockdown policy. Many transactions are carried out via mobile applications or e-commerce. To be implemented to work units throughout Indonesia, this Digipay policy requires adequate infrastructure support, including the availability of comprehensive and even internet networks.

In addition to infrastructure support, it is also important to pay attention to the capability of human resources, or in this case Digipay users including: PPK, Procurement Officials, Treasurers, and Goods/ Services Providers. All those users must understand correctly their duties and authorities and be able to operate the system properly. Technical training and education may be needed to operate Digipay and it should be carried out in a continuous and scheduled manner.

Currently, the availability of goods/ services suppliers on Digipay is not as extensive as private marketplaces such as Shopee and Tokopedia, resulting in limited choices of goods/services for Work Units. The solution to this problem is outreach and assistance for MSME owners to register with Digipay. Digipay provides many benefits for MSMEs, including the certainty of payment and the opportunity to become partners of many work units.

Another challenge is the exclusivity of the Digipay platform. Work units can only transact with vendors with accounts from the same bank. For example, Work unit A has a BRI account, thus, it can only transact with vendors who have BRI accounts; Work unit B who has a UP account in Mandiri Bank can only transact with vendors who have an account in Mandiri Bank. Despite having similarities in business process standards and technical use, for example, in terms of inputting the type of goods or services on Digipay002, Digipay008, and Digipay009, this exclusivity has the potential to present problems in use by Digipay novice providers of goods or services. Platform providers should learn from the success of the most popular marketplace in Indonesia. Creativity and innovation in a financial service product industry, especially banking, is needed for the sake of banking customers' convenience [14].

3.5 Evaluation

The implementation of Digipay in the use of UP presents more advantages compared to the use of UP without Marketplace and Digital Payment. The advantages are laid out in Table 1:

Based on the analysis of Dunn's version above, several things can be recommended:

- Improved Security When Using Digipay, with Biometric Authentication Such as Fingerprint, Face, and Voice

Table 1. Comparison before and after using digital payment-marketplace.

	Before using Digipay	After using Digipay
System integration	The payment mechanism has not been integrated with the procurement mechanism	The digital payment mechanism is integrated with the electronic (digital) procurement mechanism at the same platform.
<i>Time</i>	Time consuming, very dependent on the distance between the work unit and the vendor, transactions cannot be carried out at any time, it takes time to visit the vendor, the time required to visit the vendor cannot be measured (may even take all day)	Shopping anywhere and anytime, the procedure only takes 5–10 min, in the case of the price bargaining process, it will take about 15 min, not dependent on the distance between the work unit and the vendor
Cost	Requires transportation costs for shopping physically to vendors	Online shopping, no travelling required
Process	Not yet paperless; the submission, verification, and approval processes are still manual	Paperless, all stages of order submission, verification, approval, and communication are web-based
Tax and work order	Calculation of the amount of tax to be paid and the provision of accountability files in the form of receipts and Payment Orders are still executed manually	Merging the process of calculating taxes that must be paid and providing accountability files in the form of receipts and Payment Orders can be done through the platform
Government system	Payments are made in cash, this does not support the success of the National Non-Cash Movement Program (GNNT)	Payments are made non-cash using KKP and/ or CMS VA, this is of course in line with the National Non-Cash Movement Program (GNNT)

- Support for the availability of adequate internet networks is needed, especially in areas where internet access is still scarce
- Technical guidance for users is needed on a continuous and scheduled basis in terms of operating Digipay, in addition to assistance to vendors to register with Digipay
- Innovation in the Flexibility of Use from the Digipay Platform Provider is Needed so that Transactions Can Be Carried Out via Different Banks. For Example: A Work Unit that Have uP at Bank Mandiri Can Make Transactions with Vendors Who Have BNI Bank Accounts or Vice Versa.

4 Discussion

The use of digital technology in managing state finances has proven to provide benefits, such as flexibility, effectiveness, simplicity, and transparency that can encourage accountability. However, attention should also be directed to the anticipated aspect which

is the possibility of a cyber-war. When state financial management is one hundred percent digitized, but the government's cyber security is weak, when a cyber-war occurs, the digitalized state financial management system will be paralyzed.

Cyber war is a war using computer networks and the internet to compete and dominate, disrupt, stop communication, change the flow of information and information content, and various other cyber actions that are detrimental to the opposing party. Cyber war may involve actions such as hacking, cyber sabotage/sabotage, cyber espionage, cyberattack, guarding, spyware, vandalism, and attacks on the electricity network or vital elements of a country [15]. Babys further explained that cyber war has two goals, namely the intermediary goal and the main goal. The intermediary goal of cyber warfare is to destroy the system while its main goal is to destroy a nation. The danger of this cyber war is certainly something that the Indonesian government must seriously watch out for.

Indonesia has been involved in cyber wars with China, Taiwan, Portugal and Malaysia. Indonesia has also experienced cyberattacks in the form of the Stuxnet worm, which was allegedly perpetrated by the United States and Israel [16]. The Indonesian government has established the Badan Siber dan Sandi Negara (BSSN) to carry out cyber security tasks. However, the danger of this cyber war still needs more attention, considering the impact it can have on the state financial system if the state financial system is one hundred percent digitized.

It is hoped that future research uses quantitative data to analyze challenges in the field in the implementation of this Digipay policy. Studies may involve many work units across Ministries/ Agencies so that representative conclusions may be achieved to illustrate the extent of the implementation the Digipay policy. That way, more concrete alternative solutions can be recommended for problems in the field.

5 Conclusion

The Policy on the use of UP using Digipay in the work unit has a clear and consistent standard operating procedure. Moving forward, it is hoped that this policy can be implemented in all work units of ministries/agencies in Indonesia, because using UP using Digipay has many advantages when compared to using cash UP. There are challenges to the implementation of Digipay: transaction security, uneven distribution of internet networks in all regions in Indonesia, users' lack of understanding of the operation of Digipay, and platform exclusivity; to solve these problems, improved transaction security guarantee, adequate internet networks, improved HR capabilities in operation, and innovation from the Digipay application providers in terms of flexibility of use are needed.

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