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System Information on Electronic Money as a Payment Instrument in the Future of Cashless Society

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Abstract: Payments are traditionally made through cash or credit card even as virtual payments are made the use of proprietary software program such as payment cards, and electronic money. Less Cash Society is a new structure that exists in society, where the physical form of money can be replaced by a new system, namely electronic money as a medium for transactions, so that money is no longer seen as a physical form like a sheet of paper or metal coins. Within the future, the less cash society application is campaigned with the aid of the government as a part of one of the following: community training, especially in Indonesia in facing various demanding situations of global competition, due to the fact minimizing using physical money is one of the strategies implemented in order that the price of the rupiah stays stable. The method used by the author in collecting data is the literature study method. By studying relevant books and literatures related to research on information systems and the use of electronic money as a transaction tool towards a cashless society. In the near future, Indonesia can truly maximize the strength of local resources and utilize what is in this country to realize a less cash society through manufacturing all needs, hardware and payment infrastructure using electronic money. Indonesia do not only act as consumers, but also grow local industries and optimally utilize human resources. So that an independent, sovereign and prosperous Indonesia can be realized.

Keywords: Electronic Money, Cashless, Cashless Society, Electronic Wallet, Electronic Transactions, GNNT, RFID

INTRODUCTION

The development of the world of technological know-how in Indonesia occurs very hastily and provides exceptional advantages for the development of society. Various jobs that was finished via the community the use of physical strength, now there are numerous conveniences with the use of automatic gadgets and machines. Likewise, the invention of various technologies and statistics structures that allow computer systems to characteristic increasingly state-of-the-art. So that diverse versions and new technological improvements are born which can provide many conveniences for community activities, specifically in Indonesia [1].

The effect of the rapid improvement of generation additionally takes place within the global economy. The payment system is one of the components that make contributions to economic activities, in particular inside the implementation of transactions accomplished by using the community. Bank Indonesia has additionally applied policies to shield various elements of bills, specifically increasing safety, increasing get admission to, performance, as well as fee structures that desire patron safety [2].



Source : RadarCirebon.com, 2021

Figure 1. Electronic Money as a payment instrument in daily need such as gas station [3]

The development of payment structures in enterprise and every day transactions has evolved, which previously used cash and debit playing cards more, now prepared with a virtual payment machine or generally called electronic cash.

Digital-primarily based non-cash payments are more and more turning into a payment trend in various retail and marketplace sectors, even for the every day wishes of the Indonesian people. This is due to the fact the virtual payment system is considered more effective and realistic. Digital price contraptions also are one of the driving factors for the growth of financial conditions. Bank Indonesia (BI) referred to that the fee of transactions using electronic money price structures is increasing

Transactions fee on the usage of digital money facilities have not decreased so far at some stage in the Covid-19 pandemic. Unexpectedly, the transaction cost definitely increased , particularly 41.2%, whilst transformed to Rp. 204.9 Trillion, in 2021 [4].

Within the future, the less cash society application is campaigned with the aid of the government as a part of one of the following: community training, especially in Indonesia in facing various demanding situations of global competition, due to the fact minimizing using physical money is one of the strategies implemented in order that the price of the rupiah stays stable [6].

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Digital technology nowadays is a technology that prioritizes computer/digital activities as opposed to the use of human strength. However more inclined to the fully computerized and sophisticated operating system the use of a computerized system/format that can be read via a personal laptop. Virtual era is essentially simply a very fast counting machine that involved all styles of information into numerical values. The improvement of this generation brings modifications in the excellence and performance with bigger capacity that is designed and transmitted, including; images come to be clearer because of better fine, more efficient capability and quicker shipping processes [7] .

Payments are traditionally made through cash or credit card even as virtual payments are made the use of proprietary software program such as payment cards, and electronic money. The primary additives of a virtual payment machine consist of: money transfer programs, network infrastructure, regulations and mechanisms that govern the usability of the system.

Electronic Money & Wallet

In Bank Indonesia Article 1 & Paragraph 7 concerning the system of payment transaction process in regulator number 18/40/PBI/2016, explains that ; an electronic wallet is a electronic service mainly fo storing data on payment instruments including payment instruments such as payment on using card and also electronic money, which this technology can also hold customer's funds,& also to make payments [5]. Bank Indonesia explained the difference between electronic wallets and electronic money. The difference is that electronic money is a non-cash payment instrument made on the basis of the value of money that is deposited in advance to the issuer and then stored electronically. The bank will store the data and values inside in a media server or chip [8].

Based on the media that being used to record the 'value for money', then converted into an electronic based format, electronic money products are categorized into two subgroups, one is card-based products and another is software-based products.

1. **Card-based product (prepaid card).** E-money in the form of card-base products is often referred to as electronic purses. Card-based products are principally intended for face-to-face payments, however, currently some card-base products can also be used for payments via the internet by adding certain tools to the user's computer. This type of product uses a media card with integrated circuit (IC) technology or known as an 'IC card' which contains a microprocessor chip (chip) and identified with RFID technology . RFID is a technology used to identify data with the help of radio waves. Where the information is recorded in a small chip or RFID tag, making it possible to be embedded in various media, such as cards, bracelets, clothes, humans or even animals. While the RFID tag itself is capable of recording data up to 2,000 bytes [10].
2. **Software-based products (prepaid software).** Often called dig ital cash. E-money products that fall into this group are principally an application (software). Electronic money refers to the definition published by the Bank for International Settlement based on its publication which defines e-money as a value that is stored and has been recorded in the e-money system and stored in a media someone's gadget. Electronic media where e-money is stored has various types, one of which comes from smartphone media as has been published by PT. International Visionet or so called OVO [11]. The security aspect is one of the most important thing in electronic money. If the level of security aspects on electronic money is high, it can be interpreted that the number of electronic money users will increase. The perceived security of the use of electronic money used by someone will encourage someone to use electronic money and make the person does not hesitate to use electronic money as a payment mechanism that can be used in conducting payment activities with the seller in exchange for a product or service [13].

Less Cash Society (LCS)

The sophistication of financial technology dominated by millennials, they prefer to transact daily with digital wallets compared to carrying a wallet filled with cash. There are 68% of digital wallet users are millennials, because they have a more active level of productivity than other generations. With the increase of the usage of electronic money, it implies that the initiation of the Less Cash Society movement, which is a social phenomenon that occurs in a society that tends to reduce the use of cash as a transactions and switch to using electronic money (e-money).

Less Cash Society is a new structure that exists in society, where the physical form of money can be replaced by a new system, namely electronic money as a medium for transactions, so that money is no longer seen as a physical form like a sheet of paper or metal coins [14].

The term Less Cash Society (LCS) movement is one of the a program launched by Bank Indonesia since 2014 which was named The Non-Cash National Movement (Gerakan Nasional Non Tunai / GNNT) is a movement to raise public awareness in using non-cash payment facilities. The times are growing then a less cash society cannot be avoided,

especially for millennials, because they will be accustomed to using advanced technology [15].

METHODS

Explained in the background that the purpose of this study is to analyze in detail about the application of information systems on electronic money as a means of payment with the hope of realizing a less cash society in Indonesia. The author also uses the method in this writing as a data research process, in order to support the preparation of this research. The method used by the author in collecting data is the literature study method. By studying relevant books and literatures related to research on information systems and the use of electronic money as a transaction tool towards a cashless society. The sources used are from various scientific articles, national and international journals, national media coverage, and statistical data from related agencies. In addition, in this study, Authors also actively discuss in creating constructive suggestions towards a cashless Indonesia and supporting a more independent, prosperous and sovereign Indonesia program.

RESULT AND DISCUSSION

Strength

The cashless society program can give many benefits. Public transactions use electronic money has increased significantly. Recorded during the month of January – July 2020 the value of money transactions reached Rp. 16.7 T [16]. This shows an increase from the previous year by 59% compared to the average transaction value in the previous period of Rp. 9.9 T. Improvements in 2020 especially in April, due to the PSBB policy by the government so that in meeting their needs while at home, people tend to conduct transactions using electronic money.

First, in terms of safety and practicality. Carrying cash tends to be more and takes up more space than carrying non-cash payment instruments which are usually in the form of cards (chip based) or other (server based). In terms of security, carrying non-cash payment instruments is relatively safer and more practical when transacting compared to cash. There are up to 70% increase in use of financial apps in Indonesia starting June 2019 until June 2020. In June 2020, there was an increase in the total number of sessions he use of financial applications amounted to 1.67 or increased by 2.83%. This matter shows that e-wallet is part of life in society. Usage within one year increased significantly [17].

Second, reduce the cost of money management and also for the cash handling. The use of non-cash instruments as a payment instrument drastically will reduce the cost of printing cash. Reporting from the official Bank of Indonesia every year spent budget of IDR 3.5 trillion to print new money, including replacing the shabby money that was destroyed.

Third, economic planning will be more accurate. Non-cash transactions will be recorded more completely and easily tracked. This will then make it easier for us to calculate economic activity. Indonesia is still in a position where is still very vulnerable to various practices of possible underground economy activities which are generally carried out in cash. Reducing cash transactions must be expected to minimize the rate of criminal crimes and reduce the potential for loss of numbers recorded in GDP (gross domestic product).

Weakness

E-money has a positive effect but not significant to inflation in Indonesia. This can be caused by payment transactions using e-money not yet known by Indonesian society at large. So that less than the maximum use of e-money compared to using cash. In addition, e-money cannot affect direct inflation [19].

The use of electronic money in e-commerce has a significant effect to the level of the Less Cash Society, this also supports the program that has been launched by the

Indonesian government, namely the Gerakan Nasional Non Tunai (GNNT) which carried out through Bank Indonesia as one of the government's efforts to realizing increased awareness and enthusiasm of the community in the use of tools electronic payment in Indonesia. In the long term income per capita has a positive and significant effect on the demand for e-money. In the short term income per capita has a positive and insignificant effect e-money request. The implications of the conclusions above are that first, the government needs collaborate with stakeholders and non profit organization to socializing the Less Cash Society program so that the entire community getting to know non-cash instruments. So that it can increase public awareness in using e-money. Based on the description above, the use of money Server-based electronic (e-money) has an influence on the creation of Less Cash Society in Indonesia [21].

Opportunity

Rapid technological developments have had many positive impacts, especially on the Indonesian economy, such as making non-cash financial transactions easier and offering a variety of options for buying and selling transactions. These fact open numerous opportunities for Indonesia and Local Industry to participate and support the growth of Cashless Society.

The use of non-cash transactions with non-physical payment systems, such as those currently crowded, namely electronic money or e-money, which is already familiar with the increasing number of users of electronic transactions, is in line with the regulations issued by Bank Indonesia regarding electronic money. In that regulation, stated that electronic money is issued on the basis of the value of money that was deposited in advanced by the holder to the issuer and the value of the money is automatically stored electronically in a medium such as a server or chip [23].

However, the system information & hardware technology used to create a less cash society still relies heavily on imported hardware from other countries. It is known from Indonesianimporter.com, The top 5 countries that are suppliers of RFID cards, chips and readers for Indonesia are from China. , Hong Kong, Japan, South Korea and Mexico. This is very unfortunate because in order to realize a prosperous, independent and sovereign Indonesia, Indonesia should have its own industry that can provide qualified hardware supplies to realize a less cash society in the next few years [24].

To be able to implement digital-based transactions in various parts of the country, of course there must be improvements in infrastructure and technology from soft ware and software that must be installed in the system. It is a pity if in fulfilling the facilities in the realization of a less cash society, Indonesia still relies on hardware from other countries. even though this industry has the potential to develop and prosper the country's economy with the realization of the GNNT program.

Interestingly, because this fact that this industry is starting to exist, one of the RFID manufacturers and one stop service in Indonesia is starting to grow and inspired to support infrastructure improvements in realizing a less cash society.

RFID Indonesia is an Indonesian RFID equipment distributor and integrated solution provider. Since 2004, They has been involved in several RFID projects in many government and private sector. Giving RFID solutions for various systems, include Electronic Payment. The company's goal is to assist customers especially from Indonesia in trying out a new RFID system or transitioning from an outdated system with proper requirements analysis and in-field testing of suggested hardware and software to achieve the best efficiency and benefit at the lowest risk as possible. Eventhough there are some possibilities that some hardwares are stil imported from overseas, but the fact that Indonesia start to understand the potential of this industry and start contributing is better than nothing [25].

Threat

Cashless Society Program is not yet stable due to lack of facility from the government and public's understanding about the system and the technology behind it. To make sure of the growth of better system information in Cashless Society, the public must be actively given and joined educational program of non cash program by Bank of Indonesia. The easiest education can be provided by the government through cashless movement programs. In addition, companies that manufacture fintech products if they want and are able can also provide education to the public while launching or promoting fintech products.

The next obstacle, traditional markets are almost impossible to adopt a non-cash transaction system. It is better for this sector to be left as it is today. If the government continue to insist on integrating traditional markets with a cashless system, it will most likely kill small traders who do not have the ability to do so. Likewise with small kiosks and stalls which are not even possible to adopt a cashless system. Instead of developing the community's economy, the implementation of the non-cash system in these sectors will only destroy the stability of the community's economy, which is not yet stable.

Even though Indonesia already looks like "technology literate", in reality the growth of the digital economy in Indonesia is still somewhat inferior to neighboring countries such as Singapore and Malaysia. There are at least two things that are the main obstacles to this policy, the climate or business ecosystem and the classic problems of infrastructure.

In addition to infrastructure ,networks such as the internet which have not been comprehensive to all corners of the country, the lagging development of electronic transactions in Indonesia is also influenced by the level of financial literacy which is still low. A cashless society will be realized if the majority of the people understand how to carry out financial governance or financial literacy

Education for the system and benefits in Cashless Society can also given by the collaboration between Ministry of Finance, Ministry of Communication & Informatics , non-profit organization , and Asosiasi Pengusaha Komputer Indonesia (APKOMINDO) to create better understanding and support for the growth and implementation of Cashless Society In Indonesia

Strategy To Speed Up Cashless Society In Indonesia

The fast change inside the Indonesian humans's behavior toward cashless society has been extended by the pandemic. Cashless society is on the center objective of bank Indonesia who continues to facilitate the transformation method and could result in benefits together with extended pace of transactions, lower value in currency control and strong records accumulating. One key milestone is the issuance of a standardized QR for payments throughout virtual wallet to assist the fast growing E-commerce area.

Seeing the big challenges facing Indonesia, this country has homework to create a cashless society culture. Changing a system and making it a habit is a long and difficult process. This requires support from many parties, both from policy makers and from the community itself.

Government also has to make sure that the internet service providers can cover all province in the country. If so, the growth of cashless society will be inevitable. Most of the facility and system need internet connection and that's the key to success. Collaboration with internet service provider to build more transmitter and offer an affordable internet plan will be very helpful for the public to implement cashless payment.

Initially, it was predicted that a cashless society would only be realized in 2030. However, the pandemic accelerated the realization of a cashless society in 2026. As many as 6 out of 10 Indonesian consumers carry less cash because they are worried about the spread of the virus. This number is the highest in the Southeast Asia Region.

With this strategy, the future Indonesia hopefully can truly maximize the strength of local resources and utilize what is in this country to realize a less cash society through manufacturing all needs, hardware and payment infrastructure using electronic money. So that Indonesia do not only act as consumers, but also grow local industries and optimally

utilize human resources. So that an independent, sovereign and prosperous Indonesia can be realized.

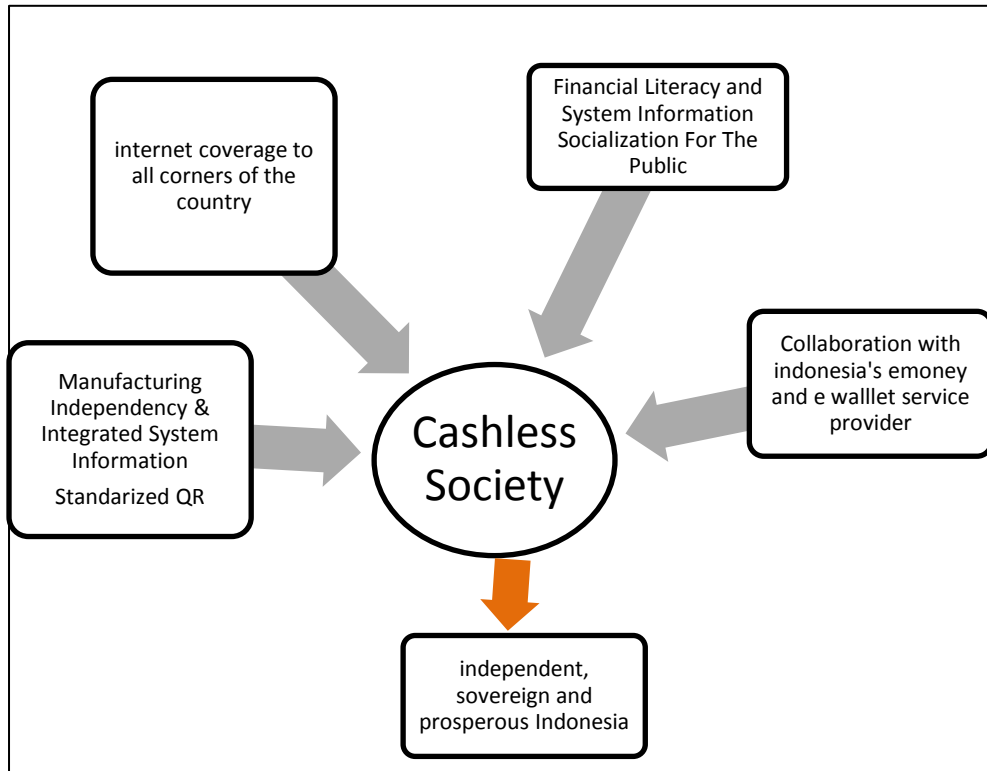


Figure 2. Researcher's on the Design of The Cashless Society for an Independent, sovereign & prosperous Indonesia

CONCLUSIONS

The information system applied to electronic money-based transactions is growing rapidly positive and give significant influence on the creation of the Less Cash Society movemen. To support the institutional transformation program and the success of the National Non-Cash Movement (GNNT) by the Ministry of Finance, education for the system and benefits in Cashless Society can also given by the collaboration between Ministry of Finance, Ministry of Communication & Informatics , non-profit organization , and Asosiasi Pengusaha Komputer Indonesia (APKOMINDO) to create better understanding and support for the growth and implementation of Cashless Society In Indonesia. In the near future, Indonesia can truly maximize the strength of local resources and utilize what is in this country to realize a less cash society through manufacturing all needs, hardware and payment infrastructure using electronic money. So that Indonesia do not only act as consumers, but also grow local industries and optimally utilize human resources. So that an independent, sovereign and prosperous Indonesia can be realized.

Suggestions for further researchers, in order to develop this research, researcher can conduct more research using independent variables outside of this research in order to obtain complete results regarding what factors can influence the creation of the Less Cash Society movement especially in the aspect of system information innovations. Hopefully, more researchs are expected to provide a broader picture of the influence associated with this research. And researchers can also use other social phenomena to make it easier to measure the Less Cash Society movement.

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