

# A market study for a secure e-commerce platform in Indonesia

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A market study for a secure e-commerce platform in Indonesia

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Bachelor's Thesis

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### A market study for a secure e-commerce platform in Indonesia

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As the fast development of electronic commerce in the past few years, the establishment of a secure e-commerce platform is necessary and significant to organisations. This market research aims to research the existing three competitors in Indonesian e-commerce market and find the requirements and preferences of the users in Indonesia through the real interview, documents and desk research, then give some practical recommendations on how to develop the secure e-commerce platform in Indonesian. The knowledge bases of this paper are E-commerce market theory and the analysis of Macro environment and Micro environment, as well as the PEST Model and SWOT Model. The methods used are interviews and the review of the previous documents in electronic commerce with its data. Through the interviews and analysis, the result shows that the strength of secure third party payment platform from Koudai Company in Indonesian e-commerce market is its high security while its biggest weaknesses are that it is less well known developed by pocket companies. As a result, to further improve the secure e-commerce platform in Indonesia, this paper is going to give the recommendations to accelerate the construction of the financial system supporting electronic payment platform and the construction of logistics distribution system supporting electronic payment platform, and integrating credit information system to enhance integrity.

Keywords: E-commerce, Third party payment, Market Research, Indonesia

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### 1 Introduction

The introductory chapter is composed of four segments, which are the background, the introduction of the case product, the objectives of the thesis and the structure of the thesis.

### 1.1 Background

In the past decades, electronic commerce and especially electronic payment systems have been developing rapidly. Undoubtedly, transferring monetary value is the foundation to build up e-commerce participant's confidence, and it could enhance the electronic transaction as well. The implementation of third party payment platform is an essential way to establish the guaranteed credibility system, and it can promote the electronic commerce growth (Jin 2007).

The current e-commerce market shows much more opportunity comparing to other developing Asian economies, with current projections putting this archipelago nation's e-market at \$130 billion by 2020 coming third behind China and India (Hugh 2016). So, there is great potential for the e-commerce development in Indonesia. Entrepreneurs should take a chance to understand and participate in the Indonesian e-commerce market.

Understanding and evaluating the situation of a new market that companies with core products plan to march in is an initial and important step to be successful. Besides, a comprehensive evaluation of core products tends to be essential. However, the complicated market situations and analysis strategies will set a challenge for the company to find out accurate results on market research and product evaluations.

### 1.2 Koudai Company and Weidian

The author took an internship working with the development team of the secure e-commerce platform for Indonesia. The idea of this thesis was come up with during that period. Here are some brief introduction about the product and the company.



Figure 1: The logo of Weidian

Koudai is a young and active company based in Beijing, China. Koudai's main product is Weidian, also named as Youshop in English. Weidian can be considered as a platform focused on mobile e-commerce which is at the growth stage. Weidian's mobile commerce platform bases on social relationships with no centralized entry point. Users can post their products information through various social media platforms, not only on WeChat, which is like Whatsapp and is the most common chatting application in China. Weidian, backed by Tencent, has an ultra-streamlined registration and administration processes which make it easy for anyone to sell goods or services (China Channel 2015). Tencent is one of the most largest Internet and gaming companies in China and here are many services offered by Tencent including social network, web portals, e-commerce, mobile games and multiplayer online games. In China, the most two well-known messengers QQ and Wechat belong to Tencent.



Figure 2: The logo of Tencent



Figure 3: The logo of Wechat

Weidian is an app that people can download to their mobile phones for free. With taking a picture and writing a short description, users can add an to item to their own shops easily. Weidian lets customers share items on Facebook, Twitter, Line and other social media networks. Moreover, sellers can easily receive payments with online and offline transactions. Weidian cooperates with Stripe and other top international payment companies and uses strict security methods to protect users' transaction.



Figure 4: User interfaces of sellers' version

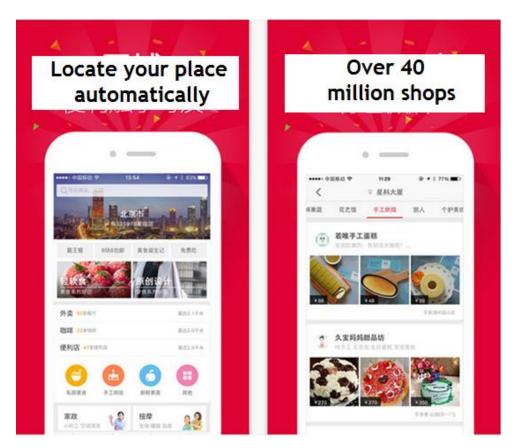


Figure 5: User interfaces of buyers' version

From 2014, Koudai has been focusing on the mobile app market in Indonesia. As there is a bright future of the mobile internet in Indonesia and Weidian had a big success in Chinese mobile app market, Koudai started to develop an online payment app based on Instagram platform in Indonesia, named Instapay. The 1<sup>st</sup> version of the secure e-commerce platform has been completed. However, the current version can only be used by several private users. It has not been launched as public.

As the current situation of the secure e-commerce platform presented, the developing team members showed their interest on the topic of the analysis of third party payment development in Indonesia. With some brief research, the interest of the author aroused and cooperation was determined.

### 1.3 Thesis objectives and aim

The aim of the thesis:

The author could find user preferences in Indonesian e-commerce and contribute to the evolution of the secure e-commerce platform, belonging to the developing team in Weidian Company.

There are three objectives listed as following:

- List top 3 competitors in the Indonesian secure e-commerce platform. With finding out these three competitors, the existing Indonesian e-commerce market can be identified and analysed with PESTEL model.
- Interview 38 Indonesian e-commerce users by face-to-face interviews and telephone interviews and find out their top 3 user requirements.
- Make recommendations for the developing team on how to develop the secure ecommerce platform in Indonesia.

### 1.4 Structure of the thesis

The thesis consists of seven chapters. Chapter 1, 2 and 3 gave the background and theoretical knowledge to establish a framework for the research subject. In chapter 4, an empirical study of the interviews, which was designed to find out user requirements of Indonesian e-commerce users, was conducted. In chapter 5 the e-commerce market situation in Indonesia according to market and users aspects, was demonstrated to the case product team and the analysis of third party payment platform was developed. At the last two chapters, all material was gathered and analysed. The final findings and results was given and the thesis was completed.

Chapter 1 includes the background of the research, the objectives of the thesis, the limitations of the research and the structure of the thesis.

Chapter 2 provides the theoretical background and an introduction to 3rd party payment platform. Also, Chapter 2 provides the theoretical background and gives an introduction to e-commerce market.

Chapter 3 represents the research approach in details. The aim of this chapter is to introduce and have the readers ready to the approaches chosen by the author.

Chapter 4 introduces the interviews carried out by the author and the developing team of Weidian company. This chapter ends up with the author's analysis and results of the interviews.

Chapter 5 presents the analysis of existing Indonesian e-commerce market and the secure e-commerce platform.

Chapter 6 states a conclusion of the project. It sums up the theoretical framework and makes recommendations on how to develop the secure e-commerce platform. A list of references, figures and tables used in the thesis and appendix follows afterwards.

Chapter 7 provides the conclusion and outcomes of the thesis project.

### 2 Theoretical background

### 2.1 Indonesian E-commerce market

Electronic commerce could be explained as activities that are related to purchasing and selling of goods and services on the internet. Generally, it is a way to conduct business electronically. According to Turban, King, Lee, Warkentin and Chung (2002), E-commerce is buying and selling of goods and services, and the transfer of funds, through digital communications.

Indonesia's current e-commerce market is similar to China's online marketplace's initial stage. There are a lot of entrepreneurial sellers providing items based on social media recommendations. In this aspect, Indonesian e-commerce also mirrors the early U.S. e-market that was full of customers wary to trust online payments and sellers. Indonesia is definitely unique because it has the potential to create a combination of the widest opportunities from American and Chinese e-commerce economies, promoting the Indonesian online marketplace onto the global stage.

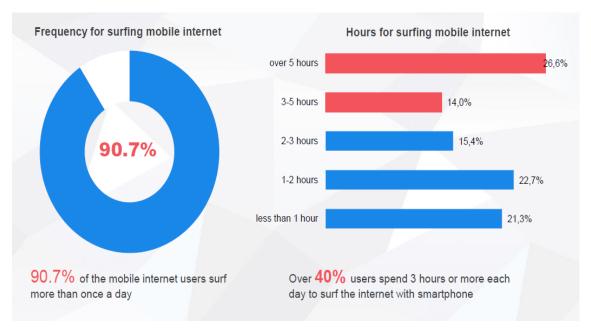


Figure 6: General usage of mobile internet in Indonesia

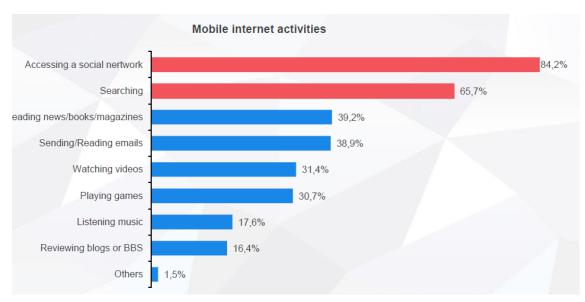


Figure 7: Mobile internet activities in Indonesia

Indonesia becomes one of Asia's leading mobile-first nations. Over 70 percent of Indonesia's internet traffic came from mobile devices. Indonesians also have held mobile-first initiatives coming from social media because the Indonesian mobile Facebook usage rate is the highest all over the world. There are 63 million Indonesian Facebook users in 2015. The mobile-first path also makes retailers to concentrate on developing useful mobile functionality and demonstrating unique chances to dominate in the e-commerce space. Indonesian e-commerce market is becoming one of the largest in the world.

### 2.2 Market analysis

Market analysis is a phrase of two words. People can define a market as any virtual or physical place offered to sell commodities or services and analysis implies the detailed inspection of the traits. Therefore, an overall market analysis is the evaluation for determining a market's primary traits and elements. The analysis collects the present and previous information about accessible services or goods in the market. As a portion of the market analysis, analysis of external factors, such as the social, economic and technological factors, can also predict the trends of market (Wood 2007).

### 2.3 Macro environment

The macro environment can be referred to the external environment. Based upon Kotler & Keller, external environment made up of 6 critical forces contains the economic, political, demographic, natural, technological, and social-cultural factors. (Kotler & Keller, 2012). The firm cannot control such factors while the firm performance can be influenced.

### 2.4 Micro environment

The micro environment can be referred to as internal environment. The internal environment made up of company-specific factors can have a direct impact on the company capability in serving the customers. These company-specific factors cover competitors, suppliers, customers, market intermediaries as well as communities (Kotler & Gary 2010, 90).

### 2.5 Third-party payment platform

With the service of third-party payment, the client is allowed to transfer the capitals to the account online and make a payment from the account in case of revealing the information of bank account or real credit card. As a reliable third-party platform for customers and businessmen, the system indirectly contributes to the transactions' notarization and safety, manages the account of businessmen and plays the role of private network's gateway for the traditional financial tools. These factors must be considered in designing a system of e-payment, including satisfying the changing demands of the user, the safety and effectiveness of transaction, the compatibility degree in other systems of payment, as well as the difficulty in fitting the system. The safety of payments and transactions is one of the issues concerning the customers and firms most.

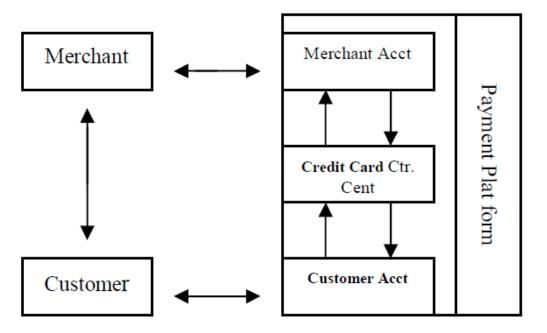


Figure 8: The third party payment procedure.

The procedure of e-payment transaction can be divided into five steps:

- Consumers choose to examine the purchased goods from the order form or shopping
  cart on the application of merchant. They pay the bill online with bank card via the
  payment platform, and the safe payment form appears from customer browser by
  linking to the safe server of the application host. Then they input the information of
  credit card in the safe payment form and the transaction is authorised in the end.
- 2. Using SSL encryption, the transaction information is transferred to the safe server of the application host. The server links with the processing bank of merchant through the third party providing the processing bank with the link.
- 3. The processor directly polls the card network, including Master or Visa Card or other cards, and then confirms the card validity and funds availability. If permitted, an authorised code can be returned to the platform of third-party payment from the processor or the processor. The authorizsation is encrypted via the platform and sent to the merchant's web server in an encrypted form. The application server of merchant will send a confirmation receipt to the customer browser.
- 4. The amount due is transferred from the bank of the card holder to the processing bank of merchant. The processing bank of merchant transfers capitals to his/her local bank. The platform will receive and check the payment, moreover, the merchant will be informed to delivery commodities on time. In addition, the platform must inform consumers when commodities cannot be sent on time and then the money will be returned.
- 5. With the third-party platform, the delivery status can be checked to be reimbursed as the transaction is not successful. The service provider of this platform provides the service for commodities returning. There are various methods of third-party safe payment, in which, two methods are introduced. The server-computers of the third-party safe payment must offer a link between the Visa/MC (or Check) Merchant Processor and the application of merchant. It must be operated with a phone. For the merchant processor, the transaction is received via the non-Internet modem bank; then the transaction is sent to be approved with the direct link to card network, for example, the Visa. The processor of merchant responds back to the safe payment gateway by means of a land line, encrypting the information and transmitting it through the website back to the original safe web host.

### 2.6 Market research

The American Marketing Association defines the marketing research as the function connecting the customer and public, consumer to the marketer via information. The information is applied to defining and identifying difficulties and chances in marketing, refining, generating and evaluating marketing actions, monitoring performance in marketing

and enhancing the comprehension of marketing as a process. Research in marketing provides a detailed description of the required information to solve these issues, prepares the approach for information collection, manages and performs the process of data collection, gives an analysis of the consequences, and communicates the conclusions as well as implications (Proctor 2005, 3.).

### 2.6.1 Market research process

David Jobber (2004) divides the process of marketing research into five steps. First, the researcher is supposed to implement a research plan. The initial process of planning usually identifies the marketing problem and outlines the objectives in research. Then it must describe the research decision, such as the sample type and size, survey approaches as well as the way of controlling the fieldwork. The schedule must be made to explain the time and whether the report is to be prepared. Decisions made at the stage of research planning will influence the future work fundamentally.

After the stage of research planning, the exploratory research is supposed to be made. It includes the elementary exploration in the research field prior to the stage of major quantitative data collection. The exploratory research contributes to understanding the market being studied as well as the people interviewed in the collection of major data. As a result, the major surveying stage will be designed with the knowledge, not with the bias and suspicion. The exploratory research aims to prevent against the sins of admission and omission. The sin of omission means the failure in researching the problem with adequate details. The sin of admission indicates to collect irrelevant data about the problem in marketing (Jobber 2004).

At Phase III, marketing research mainly collects major quantitative data. David Jobber (2004) has put forward two dominating ways to collect major quantitative data, namely, descriptive research method and experimental research method. The purpose of the former is for identification of customers' believes, attitudes, preferences, and behaviour and so on, while the latter aims at establishing cause and effect. Some control procedures are arranged for the purpose of insulating one factor's influence on a dependent variable. To make the design successful, the most important thing is to elimilate the variation related to the dependent variable. Random sampling is the most frequently used method when conducting experimental research. Both of the two ways to collect major quantitative data need interviewing process. In preparation for the interview, a detailed plan should be made, including the sampling process (the composition of interviewees and the sample size), the method for investigation (the method for interview) as well as the design of questionnaire (what questions and how many questions to ask and the purpose of the questions).

At Phase IV, the main job includes data analysis and interpretation. The analysis of The data obtained through questionnaire is expected to be shown by descriptive analysis (such as average number, standard deviations as well as frequency tables) or comparative analysis (such as cross-tabulations and t-tests). As for the interpretation of research results, the researcher should pay significant attention to. It is easy to result in failure if inferring cause and effect at the time that there is only the establishment of association. In addition, the researcher should also attach particular importance to the interpretation of means as well as percentages. With the assumption that the researcher has considered one sample instead of taking the whole interviewees into account, it is likely that any mean or percentage be an estimate subject to sampling error, which is an error in the evaluation because of the researcher's choice (Jobber 2004).

The last phase contains report writing and presentation. It is necessary for the research to include the following six parts in the report. First, a preface, including a brief outline, research objectives statement, research scope and research methods. Second, the previous study, including important former research and its influence on this research. Third, research methods and research findings. And finally, a summary of conclusions and recommendations (Jobber 2004).

### 3 Research approach

This chapter aims at introducing the research approach of the chosen topic. In the thesis, all the methods and techniques of the interview will be adopted in the subsequent empirical part. In the final part of the chapter, the author will explain the methodology and at the same time conduct a description of the data collection process and data analysis process.

With the purpose of evaluating the advancement of third party payment platform "Instapay", this research mainly adopts qualitative methods including interviews as well as desk research. The researcher chooses this kind of research because it is the most appropriate considering the philosophical orientation. In addition, it can help realise the research objectives.

Denzin and Lincoln (2005) think that qualitative research is 'multi-paradigmatic' in focus as qualitative methods have a wide range of application in various fields, for example, positivism and interpretivism.

The background of the research will be acknowledged as well. The sample size is small and the scale of the research is small. In the final part of the report, the author will have a critical reflection about the performance and role in the research.

### 3.1 Interviews

"In-depth interviews are the main source of data in qualitative research and a way of exploring insiders' perspectives and perspectives" (Daymon & Holloway 2011).

The main features of the interview are: they remain flexible so that readers understand the views of the respondents. (Daymon & Holloway 2011).

"Access is an appropriate method when you want to understand the structure used by respondents as the basis for their views and beliefs about specific situations, products or problems." (Daymon & Holloway 2011).

The interview is divided into three types, such as unstructured, semi-structured and structured interviews. Semi-structured interviews are often applied for the purpose of qualitative research because the problem is focused on questions or topics, and it constitutes a good guide to the interview. The author selects a semi-structured interview because it ensures that all participants collect similar data and also allow each interview process to follow personal characteristics. The greatest benefit will be brought by semi-structured interview to the researcher and collect the answers to this case study. (Daymon & Holloway 2011).

To be more specific, the types of semi-structured interview are often associated with the thermalizing and interview techniques, because features can be identified between formal structured and unstructured accesses. This kind of interview can be distributed around a prepared plan topic. In a thermalized interview, the interviewees had freedom of speech and had a careful examination of their interpretation in the interview (Saaranen-Kauppinen & Puusniekka 2006).

In addition, types of interviews vary from each other. One-on-one interview "provides researchers with the opportunity to interpret nonverbal tips by observing body language, facial expressions and eye contact, so that it can be seen that the enhanced interviewer's so-called". (Ryan, Coughlan, Cronin 2009).

### 3.1.1 Face-to-face interviews

Face-to-face interviews, which is also known as in-person interviews. Among one of the most effective ways to collect data, it is an effective technique for the collection of quality data

and minimising unresponsive. "The main advantage of the face-to-face interview is the presence of interviewers, which makes it easier for respondents to clarify the answer or ask for clarification of some of the items on the questionnaire" (Lavrakas 2008).

### 3.2 Documents

In this study, written documents were used as a data supplement to provide the information obtained in the interview. A wide range of research papers is provided by public relations and marketing communications. Some files are naturally occurring, and they are constantly updated, such as diaries, blogs and personal pages of individuals. Another form of file is archived on sites like YouTube and Flickr, which are usually photos, movies and recordings. Documents and texts are also used for more formal purposes, such as administrative and corporate use. These documents are usually: e-mail, website, meeting notes, reports, media advertisements and employee news. (Daymon & Holloway 2011).

The document is important for qualitative research:

- Access to these documents is simple at low cost.
- The information they provide can only be provided in writing.
- The document will allow the researcher to track the order of the events so that they can compare and contrast the data.(Daymon & Holloway 2011).

"The secondary analysis is an additional analysis of the existing series of written, visual or multimedia documents that involve providing different interpretations or developing knowledge that is presented in the original requirement" (Daymon & Holloway 2011).

The study analyses the documentation to understand how the case company and its customers build and provide knowledge. This quadratic analysis (or desktop study) collects the data of the material submitted by the case company during its operation. These materials are collected from websites, brochures, letters, e-mails and reports.

"If the document is true, complete, reliable and undoubtedly the identity of the author, then it can be said to be true" (Macdonald 2008).

The documents used in the study need to be credible. The interpretation of its meaning and representation should be relevant. In order to prove the authenticity, the need to consider the history of the document and the author's motivation to avoid misrepresentation. Credibility describes whether the file is error-free, for example, depending on the conditions at which the information was collected, the accuracy may be affected. Meaning is the technique of interpreting the document. These documents should be interpreted by taking into account

the settings of these documents, and the redefined conditions and conditions should be recognised to determine the author's intentions. Representation is more difficult to prove that research rarely has the power to the number or form of documents(Daymon & Holloway 2011).

### 3.3 Desk research

Desk research can be defined as: "Collection and analysis of information that can be printed or published on the Internet" (Business Dictionary 2015).

Utilise desktop research because most of the material used to carry out the study is printed or published. The author chose this method because it provides a simple data access, it is a low-cost option that may even help clarify research questions. However, the need to pay attention to the limitations (KnowThis 2015).

Documents as a source of data limitations "the document should be used with caution" (Hammersley & Atkinson 2007).

Political and subjective documents, which are published by people, whose motives are often possible to persuade the audience, or only on behalf of the narrow point of view. Indeed, these files should be cross-checked and compared with other data sources to verify the file. These documents should be carefully examined, as mentioned above, referred to and clarified, and should be focused on authenticity, credibility, meaning and representativeness (Daymon & Holloway 2011).

### 3.4 Analysis of data

Data analysis is intended to reduce the collected data to more manageable parts. In the qualitative study, the first time the researchers conducted the first interview, began the analysis. The qualitative research process is both induction and interpretation. The research process usually causes infection, discovery patterns and themes. Later this process became a deduction. Researchers develop propositions and ideas that can be tested later. At this stage, it may be necessary to search for new data to support these propositions (Daymon & Holloway 2011).

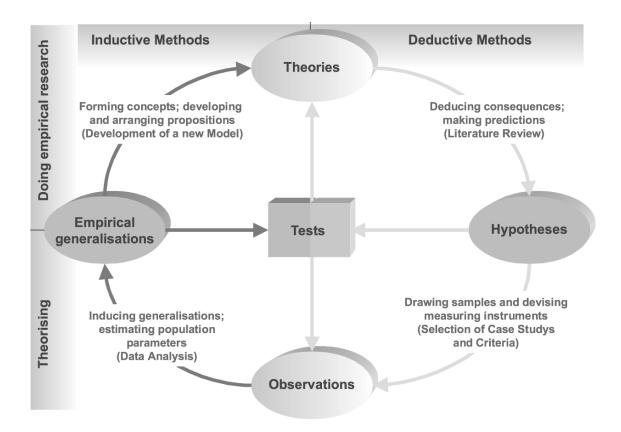


Figure 9: Analysis of data. (Brazil Embtt 2014)

"Thus, there is a constant interaction between analysis and data collection, which is why qualitative research is often described as iterative." Finally, the study is used to guard against strong scrutiny. Such as strategies that contain alternative explanations and reflect the interpretation of data, the researchers have now thoroughly examined the evidence (Daymon & Holloway 2011).

### 3.4.1 The process of qualitative analysis

Throughout the study, the analysis of data should be a continuous process. Researchers in the interview, you should write notes, reflect on research experience. By conducting a preliminary analysis, the researchers are likely to find new ideas. When the field work begins, a common theme should be identified from the data to achieve the coding and development of the concept. The following diagram depicts the stages of the qualitative analysis process(Daymon & Holloway 2011).

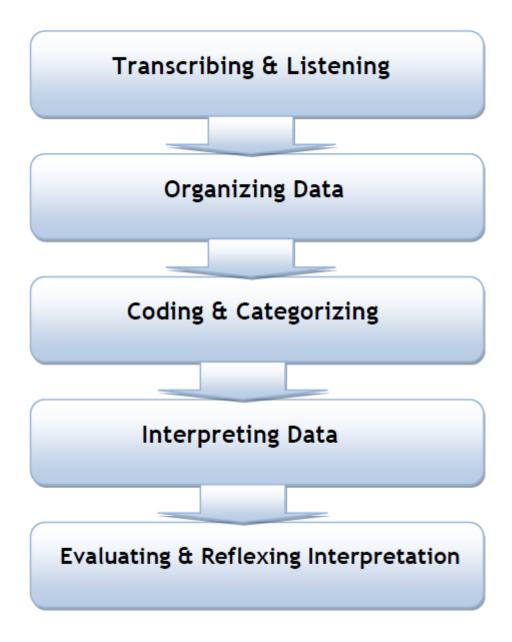


Figure 10: process of Qualitative Analysis (Daymon & Holloway 2011)

### 3.5 PEST Model

PEST is an abbreviation for "politics, economics, society and technology", which is called PESTLE analysis when PEST analysis extends to legal and environmental factors. PEST framework has many other forms, sometimes called STEP, DESTEP and steep. PEST analysis is adopted as a simple business measurement tool. The PEST framework is used to analyse the external environment in which the company is operating or planning to introduce new products / services. These external factors are not under the control of the company in most cases but will

affect the business. For example, if a restaurant is doing business well in the United States, then in some other environments, the same business model may not work properly. For example, if the same restaurant opened in Indonesia and provided alcohol to Indonesian Muslims, it could have catastrophic consequences. As a result, PESTEL analysis plays a vital role in the success of any business, enabling entrepreneurs or managers to understand the legal and socio-cultural norms of the environment in advance and help companies change their business model to meet the external environment. Therefore, by analysing the environment, companies can take advantage of the greatest opportunities and anticipate future potential threats.

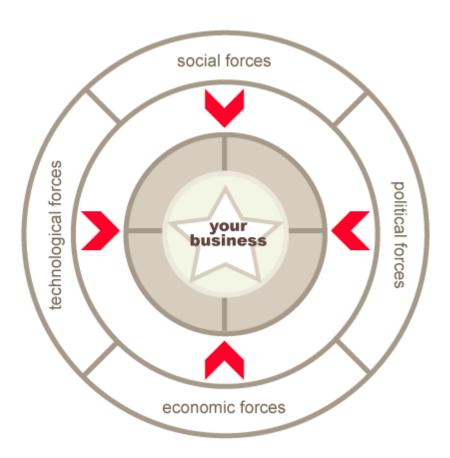


Figure 11: Main aspects of PEST analysis.

### 3.6 SWOT Model

"SWOT analysis (or SWOT Matrix) is a structured planning approach for the adoption of assessing the strengths, weaknesses, opportunities and threats involved in a project or business, and SWOT analysis can be used for a product, location, industry, or individual. In this process,

it may involve a business or objectives of the project to identify internal and external factors that are conducive to and are not conducive to achieving this goal ". (Jeges 2013).

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# SWOT ANALYSIS

Figure 12: SWOT analysis model.

### 4 Interview

The empirical study is based on the interviews with Indonesian e-commerce users. The interviews can be divided into two parts, which are face-to-face interviews and online interviews.

During the summer of 2015, the author has taken part in an internship with the developing team of the Indonesian third-party platform. The team went to Jakarta, the capital of Indonesia, with the developing team in order to do some market researches including the interviews on Indonesian e-commerce users. The process of the face-to-face interviews and the analysis will be explained specifically in the following part. Also, the team made more interviews on Indonesian e-commerce users by Skype and chatting applications.

Indonesia is a growing market that is undertaking a transformation of the transaction from offline to online. At the same time, the penetration rate of e-commerce is relatively low in this country, which hinders the transformation. Accordingly, the present interview research is made to figure out possible reasons lie behind this phenomenon.

### 4.1 Purpose

The interview sets its goal at investigating what features of e-commerce do Indonesian business men value the most. Then this research hopes to give some suggestions to the design of e-commerce products so that the developing team can fit in this market.

### 4.2 Subject

In order to make the interview more persuasive, the team chose various kinds of business men from different fields, including importers, online sellers, and offline sellers who are doing business in clothing, cosmetics, virtual products, sports products, etc. The interview involved 38 participants, of which 28 are male, and 9 are female. There are 8 participants selling virtual products and clothing, electronic devices; 3 participants selling clothing; 4 participants selling second-hand products, sport products and 1 participant selling cosmetics.

### 4.3 Instrument & method

The developing team posted advertisements on Facebook and Instagram, recruiting Indonesians who had any e-commerce experience to take part in the interviews. The recruiter would receive 200,000 IDR if they managed to attend the interviews on time.

As for the other type of interviews which is used during this project, social medias like Facebook, instant messaging software like Skype and Wechat, and phone calls are used to interviews. The interviewees were selected at random online or offline. For instance, the team chose some dealers randomly while browsing an online shopping website, or search key words like "importer" or "dealer" in LinkedIn to find proper interviewees.

### 4.4 Analysis of the interview

### 4.4.1 Experience of using e-commerce

30 out of 38 interviewees stated that they have once tried selling online, but 18 of them quit using it. Among these 18 people, 10 said that they got fewer customers after they had begun selling online, 5 have been confronted with problems concerning shipment damage, 8 claimed that they had to lower their prices in order to make more deals.

### 4.4.2 Frequently used platforms

Kaskus, Tokobagus, Lazada, Zalora, Tokopedia, and Bukapak are platforms that those interviewees have once used.

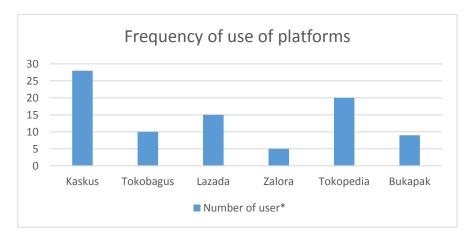


Figure 13: Frequency of use of platforms

### 4.4.3 Concerns about using e-commerce

The most frequently mentioned concern about using e-commerce is the security of payment. All interviewees expressed their worry about being frauded by customers, as they thought that they have no guarantee to receive payment online after delivering goods. What's more, 8 participants, mostly traditional offline shop owners, regarded e-commerce as too difficult to use. One importer connects low literacy of business man in Indonesia with the low penetration rate of e-commerce. In addition, 11 offline dealers and 2 importers were afraid of that selling online might cost them too much time, especially for dealing with the shipment of goods.

### 4.4.4 Expectations about future e-commerce

When asked about the willingness to use e-commerce in the future, all interviewees declared that they`d like to have a try under certain conditions. Firstly, the cost of using e-commerce should be competitive. 15 interviewees hoped that future platforms could be free to use. Secondly, there should be a clear and brief instruction for regulations of damage compensation. Those who once suffered from customers` complain said that it`s not that they ruined their reputation purposely, but the complexity of after sales process made them reluctant to follow.

### 4.5 Results of the interview

### 4.5.1 Awareness of market tendency

According to the interview, it can be told that most of the interviewees are aware of the key elements of doing business: good products quality and decent services. What's more, these business men are capable of realizing that e-commerce is the future of trading, and they are and will be involved in this trend. Particularly, different products need different kinds of e-commerce platforms. For instance, clothing and cosmetics suit popular social media like Facebook and Instagram; second-hand products selling will do well in the well-known reliable platforms like Kaskus and Tokopedia. The last but not the least, 25 participants have mentioned that future e-commerce in Indonesia needs to learn from mutual foreign products, like Alibaba in China.

### 4.5.2 Reasons for low penetration rate

There are at least three reasons that can be summarised from this research. Firstly, the cost of participating e-commerce is not competitive. This might result in the poor prevalence of internet service in Indonesia, which means this technology is not mutual enough to let the market price match with the marginal cost. Secondly, the complexity of using e-commerce is relatively high for the current Indonesian business men. There are still needs for more instructions and publicity. Thirdly, there is a lack of stimulation of using e-commerce. If a dealer's business gets worse by using e-commerce, he will not use it. However, the purpose of using e-commerce should be decreasing the selling cost so that business men can be better-off. This contradiction indicates that the price mechanism is incomplete in the e-commerce market.

### 4.6 Top 3 requirements

To sum up, the three requirements listed below are most needed features for future ecommerce products in Indonesia:

- Competitive cost for using e-commerce;
- Security of online payment;
- Complete price mechanism for competitive market.

### 5 Analysis

### 5.1 Evaluating existing Indonesian e-commerce market

Indonesia has a population of 250 million, and the popularity of smart phones is rising, so it seems to have the basic features of becoming a large e-commerce market. As consumers became interested in online shopping, the Indonesian government banned foreign investment in the country's electricity supplier industry in 2014, hindering further growth. The situation may change. The Indonesian government has lifted restrictions on foreign direct investment (FDI) and pledged to support the electricity supplier industry.

Indonesia hopes that the government will increase the proportion of electricity suppliers. Not long ago, the Indonesian president promised the core position in business growth plan, open to the foreign business market, and for the long-term challenges from skilled developers to shortage of bureaucracy too seriously - introduced relevant policies. The government said it would allow foreign investment in more than 100 billion rupiah wholly owned domestic online retail enterprises, triggering may inhibit domestic technology start-ups and a large number of existing stores of international business group couples worry (Kartiwi 2006). In fact, Germany's Rocket Internet was set up before the Indonesian blockade of foreign direct investment, and the battle for who could become the Indonesian version of PayPal has already begun. Rocket Internet set up a large electricity supplier group in Indonesia Lazada is competing with the local electricity supplier enterprise representatives Tokopedia competes for market share. Some mature conglomerates have also joined the fray. Chain Corporation has launched the Lippo group business website MatahariMall.com.

Many problems, such as numerous islands, backwards economy, low technical level, and lack of policy support, have restricted the development of Internet economy in Indonesia. Due to limited access to telecommunications infrastructure, low performance and poor quality of cable and financial ability are insufficient, lack of technical knowledge, lack of human capital, efficiency in the use of information technology is still low, information and communication technology enterprises in Indonesia is also difficult to expand the user. The Indonesian government has been aware of the important role of information technology in promoting national competitiveness in recent years. At the end of 2001, the telecommunications market was opened up, allowing more private enterprises to participate in telecom operations (Kartiwi & MacGregor 2007). As a result, Indonesia's telecommunications infrastructure has developed significantly, with three telecom providers providing telecommunications networks across the country, while other telecom providers provide telecommunications coverage in specific regions.

Compared with the European and American countries, Indonesia's e-commerce has developed late. In 1997, when the United States was fully engaged in e-commerce, Indonesia was only just beginning to use e-commerce. At that time, Indonesia did not have a full e-commerce system, and payment methods remained traditional. At that time, the Indonesian telecom market was underdeveloped. Only 6 million telephone lines and only about 2 million 500 thousand people can afford expensive computers. Only 1 million people use the Internet, and only 200 thousand people use e-commerce. Indonesia's per capita income is only \$500, and debit cards and credit cards necessary for e-commerce are used only in urban high-income groups (Damanpour & Damanpour 2001). By 1999, only 3.6% had been using telephone lines, and the lagging telecommunications infrastructure and lower computing power created slow Internet development and stalled e-commerce at an early stage of development.



Figure 14: Turnover of e-commerce in Indonesia

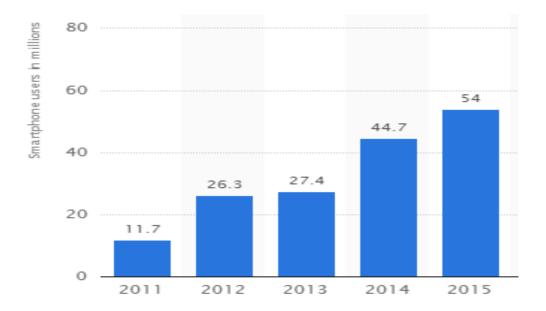


Figure 15: Number of smartphone users in Indonesia from 2011 to 2015

According to the Nielsen Media survey in 2008, 50 million people in Indonesia have been shopping online. But the growth of e-commerce is still slow. In Indonesian e-commerce, the B2B model is far more than the B2C model. Members specialising in B2B, such as Indosat.com, and other customers, including Manta, Tilaa, and other large enterprises, pay attention to supply chain transactions between enterprises. Indonesia interactive shopping centre, post office, Sanur bookstore, Javacraft and Bill, Bank International Indonesia, are specialised in B2C electronic commerce. Indonesia e-commerce consumer purchases amount to a minimum of \$55 each, indicating that e-commerce spending levels are improving. Indonesia's e-commerce should have broad prospects for development (MacGregor & Kartiwi 2010).

### 5.2 The third-party payment processor

Payment is an important part of the e-business model. The four most common forms of payment in e-commerce in Indonesia include bank transfers, bank remittances, credit card payments and cash on delivery. Among them, bank transfer is the most commonly used e-commerce payment method, and online payment has not been developed. Bank remittance is the safest way of payment for Indonesians. Consumers in Indonesia prefer bank transfers. This method is usually done by automated teller machines. The funds will be transferred to the designated bank account (Lao & Jiang 2009). Klik BCA and Mandiri Internet are a kind of online banking, which can be used to transfer funds online using a bank specific payment network. A credit card is a special card issued by a commercial bank and has consumer credit, which can be used for credit card consumption or cash access to a bank's special unit. Cash on delivery is the express delivery of goods to customers, and customer inspection, the payment

to the courier. But because the Indonesian express industry is underdeveloped, the collection of payment is limited, and very few sellers offer such services. In 2000, Aplikanusa Lintasarta, a data communications provider, introduced a new online payment network to provide real-time payment services to meet the needs of local users with higher security requirements for virtual transactions (Wong 2003). The system protects customer credit card data security and payment records, which meets the needs of B2B and B2C users and facilitates more enterprises to participate in e-commerce. Not less than seven websites, including lintasarta, can provide real-time online payment.

### 5.3 Three competitors

PayPal is a wholly owned subsidiary of eBay Corporation. It was established in December 1998 by Peter Thiel and Max Levchin (Furnell & Karweni 1999). It is an Internet service provider whose headquarter is in San Jose, California, the United States. PayPal allows funds to be transferred between users through emails to test and identify their identity, which avoids traditional mailing checks or remittances. PayPal also cooperates with other shopping sites, working as one of their payment methods. However, when using this method of payment, the PayPal charges a certain amount of commission.

Alipay is an electronic payment platform developed by Alibaba. Alipay was originally designed as a function of Taobao to solve the security of online transactions. This feature is the first third party secured transaction model. The buyer will play to Alipay account. Then, the seller will receive a notice to deliver their goods. The buyer receives the goods and confirmation, and then they will put the money allocated to the seller instruction of Alipay. So far a network transaction has been completed. Alipay became independent of Zhejiang Alipay Network Technology Co., Ltd. in December 2004, which is the relevance of the Alibaba group. In December 2010, Alipay released their users' number to be more than 550 million.

Inapay.com is tracked by us since May, 2012. Over the time it has been ranked as high as 86 749 in the world, while most of its traffic comes from Indonesia. All this time it was owned by Wong Wely of PT Indonesia Payment Solution, it was hosted by PT Qwords Company International, PT Maxindo Content Solution and others. While ONLINENIC INC. was its first registrar, now it is moved to PDR LTD. D/B/A PUBLICDOMAINREGISTRY.COM. Secure E-commerce Platform Pty Ltd adopts first-class technology and architecture to realise mobile payment to users in Australian and New Zealand.

### 5.4 Pestle analysis on the secure e-commence platform

### 5.4.1 Political analysis

With regard to the legal system, the Indonesian legal and regulatory outlay for e-commerce are still in its initial steps but it has already faced multiple major challenges. Political force is the most persistent and most unstable of all the factors within any environment as it keeps on changing. In the previous years, the government of Indonesia has given so much preference and attached so much Importance to target to the improvement of e-commerce (Nohria & Leestma 2001). One is that Indonesia does not have enough experience in drafting or developing any e-commerce regulations for matters like the security of transactions, protection of copyright issues, and the issues with taxes. According to Kariyawasam (2011), Legistrations in the Aid of areas important to the growth and betterment of e-commerce such as the privacy, consumer rights, and validation of electronic contracts and the identification of digital signatures have yet to be written, despite the fact that the Indonesian legal system develops at a very high rate to be able to satisfy the requirements of the business in the form of e-commerce. Political force is the most persistent and most unstable of all the factors within any environment as it keeps on changing. In the previous years the government of Indonesia has given so much preference and attached so much Importance to target to the improvement of e-commerce.

### 5.4.2 Economic analysis

Before 1997, Indonesia's economy had increased rapidly. But the ensuing two years of political crisis and economic collapse led to a rapid decline in the economy. It was not until 1999 that Indonesia's economy recovered and entered a steady growth phase. Indonesia's Internet also developed rapidly during this period. From 2000 to 2009, the number of Internet users in Indonesia rose from 2 million to 30 million, ranking eleventh in the world (Ghobakhloo & Hong Tang, 2013). Although only 12.3% of the population has access to the Internet, the number of Internet users, especially through mobile phones, will grow faster as the cost of the Internet goes down. With the increase in the number of Internet users, the number of electronic transactions using the network is also increasing. Previously given indicates the trend of growth of the GDP per capita of Indonesian in the new century, similar to the indicator GDP, the country has been able to maintain a continues extreme growth in terms of GDP for every person in the economy(Shevitz 2009). The overall economy has now slowed for three consecutive. All developments within the economical region in any country's environment may possess significant influence of effects on the Small and Medium Enterprises and their activities and processes.

### 5.4.3 Social and cultural analysis

More people have been shopping online via the Internet, benefited from the fast growth of the economy. In the recent years, the turnover of online shopping industry has reached \$80 billion and had grown by more than 87% for every year. According to Dransfield (2005), Ecommerce has changed the way Indonesians and shoppers think about shopping. Online sales are more social than offline. It's a whole new experience. But, like many other entities, shopping, fraud and counterfeit products are common. Although most stores will sell quality and price competitive products to customers, or explicitly in the web page of the product introduction of this product, there may be quality problems. A business often has a face-to-face engagement to build a sense of trust (Hofstede 1997).

### 5.4.4 Technological analysis

With the gradual improvement of telecommunications facilities in Indonesia, Indonesia's Internet users also showed rapid growth. In 1997, Indonesia had only 1 million Internet users. By 2011, 55 million people had access to the internet. Because e-commerce has the advantage of making customers and online suppliers quick and cheap transactions, so with the increase of Internet users in Indonesia, users of online transactions have also increased. Online transactions have been made by 25 million of 16% of Internet users. Digital electronics stores have also reached 40, and they can sell a wide range of goods such as books, mobile phones, computers, handicrafts, and clothing. But Indonesia's online sales are only 2 trillion and 400 billion rupiahs. The volume of transactions is small, and most Indonesians know little about e-commerce. Because the Internet is expensive, most people with low incomes can't enjoy the convenient service of the internet.



Figure 16: Demographics of Indonesia's Internet

Cheap smart phones, coupled with growing public interest in e-commerce, are attracting Indonesia's middle class to shop online. By 2020, the country's electricity supplier market will grow 4 times, from 22 trillion and 100 billion rupiah (\$1 billion 700 million) to 110 trillion and 500 billion rupiahs, according to forecasts. According to Singapore's DBS Bank estimates, online shopping accounted for about 2% of Indonesia's total population, electricity providers accounted for less than 1% of total retail sales in Indonesia. Indonesian president visited Silicon Valley. And since then, analysts have positioned Indonesia as the next major growth market in the electricity supplier industry in Asia. Based on Ortolani (2005), given that the possession of credit card in Indonesia is low, there may be low acceptance of the third-party payment platforms. And the lack of mature payment system can be one of the reasons of such low possession.

### 5.4.5 Environmental analysis

Environmental factors are all factors that are directly or indirectly related to the environment. That is to say, environmental factors include, but are not limited to, weather, climate, location, climate change, and even insurance (Heldman et al 2011). Although environmental protection in Indonesia is still very low, the emphasis and priority of the Indonesian government have largely been attributed to poverty and economic development. Therefore, public participation in environmental protection is low. In recent years, with the development of economy and the improvement of people's standard of living, Indonesian people are also

aware that the rising income level has led to the deterioration of the domestic environment. The Indonesian government has begun educating the public about environmental protection. With the joint efforts of non-governmental organizations and newspapers, radio, television and other media, the public's awareness of environmental protection is becoming stronger and stronger. Changes in consumer behavior place environmental protection at a higher level.

### 6 Results and Recommendations

### 6.1 SWOT analysis on the secure e-commerce platform

The most selling point of the secure e-commerce platform from Koudai Company in Indonesian e-commerce market is its high security based on security kernel. And it can also expand the company's business scope. The biggest Weaknesses are that the payment platform will be less well known developed by pocket companies, which can be a barrier to opening up the market. In addition, the settlement cycle of online payment platform is longer, so the utilization of funds in transit is low. Threats are that this new secure payment platform will face competition from the same industry. In addition, the vicious competition of banks is also worth noting.

### 6.2 Recommendations

### 6.2.1 Accelerate the construction of the financial system

In improving the financial system, the major banks are required to open online banking services to improve the electronic payment system. Enterprises improve the efficiency of electronic payment, through the promotion of electronic checks, credit cards and other electronic payment settlement means. E-commerce companies should actively establish interbank network trading and communication platform, and develop a unified online settlement center. In the end, enterprises can realize inter - Bank intercommunication and realize the nationwide electronic payment system, so as to realize the connection with the internet.

### 6.2.2 Speeding up the construction of logistics distribution system

In the construction of logistics distribution system, first, enterprises should make full use of the existing postal sector network advantages. The postal physical network is connected to the information network to realize the Internet of things, improve the efficiency of commodity distribution, and reduce the cost of delivery. Second, enterprises and governments will negotiate to reduce the threshold of logistics market and realize the opening of the logistics market, so that private capital can join the logistics and transportation, with the introduction

of western advanced logistics equipment and technology, and management tools. Finally, logistics enterprises and electronic payment platform business enterprise long-term cooperation, the establishment of long-term contracts, even the tacit understanding of mergers and acquisitions, in order to facilitate the electronic payment platform for enterprises to carry out a variety of electronic payment service platform. Through the above steps, enterprises can gradually establish and perfect the logistics distribution system covering all Indonesia.

### 6.2.3 Integrating credit information system to enhance integrity

Electronic payment platform is not met by both sides, while through the network transactions. This requires the participation of credit intermediaries to complete market transactions. The credit intermediary can play an important role only when the integrity of the whole society is higher. Therefore, the credit of electronic payment platform refers not only to commercial websites and credit intermediaries, but also to all parties involved. Therefore, the perfect system of honesty and credit must be established. Through the establishment and perfection of the whole social credit information system which adapts to the electronic payment platform, we can improve the social credit system.

The credit information system which adapts to the electronic payment platform is a credit evaluation data system of various forms of the third party electronic payment platform, the credit authentication center, and the national network. Dynamic evaluation in the electronic payment platform of all traders are, and send the digital certificates, which can enhance the security of electronic payment platform, so as to solve the electronic payment platform in the development of credit support in Indonesia.

### 7 Conclusions

### 7.1 Objectives and outcomes

As a result of the thesis project, three top three competitors has been found which are PayPal, Alipay and Inapay.com. With the interviews, top three user requirements also has been identified that are competitive cost for using e-commerce; security of online payment and complete price mechanism for competitive market. As for the recommendations for the developing team on how to develop the secure e-commerce platform in Indonesia, three recommendations has been carried out, which are accelerate the construction of the financial system supporting electronic payment platform; speeding up the construction of logistics distribution system supporting electronic payment platform and integrating credit information system to enhance integrity.

In order to develop healthily and orderly in the electronic payment platform in Indonesia, enterprises need to draw on the successful experience of other regions and the actual situation of Indonesia to find out the Countermeasures for the development of electronic payment platform in Indonesia. The advantage of the secure e-commerce platform from Koudai Company is its high security based on security kernel. The Weaknesses are that the payment platform will be less well known developed by pocket companies, which can be a barrier to opening up the market. In addition, the settlement cycle of online payment platform is longer, so the utilization of funds in transit is low. Threats are that this new secure payment platform will face competition from the same industry. In addition, the vicious competition of banks is also worth noting.

### 7.2 the usefulness of the project

E-commerce has penetrated into almost all human activities in the world. But in Indonesia, there are many obstacles to the development of e-commerce. The low density of Internet equipment in Indonesia has also slowed the development of e-commerce in Indonesia. Payment by a third party service like Security E-commerce Platform help people to move money from their accounts into online accounts, then make payment for goods and services for those accounts where one does not expose their actual numbers of the credit cards, or information about their banking accounts. They play the role of the trusted parties for any seller's or buyers online, or in any other market, where payments are made by people who are in diverse locations, in order to guarantee security of each person's money and their bank account information. As mentioned above, the development of electronic payment platform needs top-level system design. Therefore, it is difficult to step in place.

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### **Appendices**

### Questionnaire of interviews

- What is your occupation?
- What is the biggest problem when selling online?
- What are the current selling records?
- Have you ever possessed sales on any e-commerce platforms and why or why not?
- Which platform shall be your best choice?
- What is the biggest problem you have ever been confronted with?
- Do you think there is any problem concerning to order management?
- What kind of platform do you think will fit perfectly in Indonesian market?
- If you can sell online while you are in the shop, will you want to have a try?
- Have you ever purchased online? What do you think of it?
- If I want to offer you a training of online shopping, will you have interested in it?
- What kind of e-commerce platform can attract more users in Indonesian?
- How to establish a good reputation?
- How do you think of online shopping?
- Would you worry about online payment?
- Do you have any suggestions for green hands in Indonesian e-commerce market?
- If a platform provides a subsidy for every seller, will it sound attractive to you?
- What do you expect when you are selling or purchasing online?
- What kind of e-commerce might draw your attention?