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Online Marketplace for Indonesian Micro Small and Medium Enterprises Based on Social Media

Ahmad Anshorimuslim Syuhada, Windy Gambetta*

School of Electrical Engineering and Informatics - Institut Teknologi Bandung, Jalan Ganesa 10 Bandung 40132, Indonesia

Abstract

Indonesian Micro Small and Medium Enterprises (MSMEs) have particular characteristics that distinguish them from general business and thus require treatments that are different from those aimed for general businesses. In general, Indonesian MSMEs consist of various categories: micro enterprise, small enterprise, and medium enterprise. Each has different characteristics. The category that has the highest number of participant is micro enterprise. However, micro enterprises still experience problem in marketing realm. Marketing itself may be supported with the E-Commerce. But most MSMEs have not been able to fully adopt the E-Commerce due to lack of technological preparedness. Technological adjustments in the E-Commerce need to be made. In addition, the development of social media in Indonesia cannot be dismissed. This paper describes the problems encountered in the adoption of E-Commerce in Indonesia, and presents the analysis of Indonesian MSMEs condition and needs for the development of Online Marketplace for MSMEs. This analysis suggest the system design that resolves the issues in technological preparedness and technological adoption of Indonesian MSMEs marketplace or MSMEs in developing countries. The use of social media in the form of Facebook Commerce is provided as the basis of interaction on the Marketplace. This is done in order to improve trust in the interaction and accelerate word of mouth marketing via the internet and social networks.

Keywords : Marketplace; E-Commerce; MSMEs; Social Media; Facebook Commerce

* Corresponding author. Tel.: +62-22-2508135; fax: +62-22-2500940.
  E-mail address: windy@stei.itb.ac.id

1. Introduction

Being a developing nation, Indonesia struggles on economy. Indonesia's economy nowadays is supported by Micro Small and Medium Enterprises (MSMEs) consisting approximately 52 million units in 2011, amounting to 60% Gross Domestic Product (GDP) contribution [1]. Thus, the development of MSMEs is fundamental. However, MSMEs lack marketing skill, impeding its growth and development. The MSME products that circulate in the market are not equipped with the necessary publication. On the other hand, the competition with foreign products intensifies, weakening the presence of MSMEs products in the market. The use of E-Commerce in today's marketing does not do much help.

Indonesia is the country with the fourth largest number of Facebook users in the world, with over 50 million users [2] and sixth largest number of Twitter users with nearly 30 million users [3]. There is great opportunity for socializing and promoting the products using the social networks. Through the social networks, consumers will be the active participant in many forums, share interesting information, comment on and make review on posts.

However, a study shows that the adoption rate of E-Commerce in developing countries is still low. In Indonesia, this is due to lack of several key factors, such as educated resources, awareness and information resources [4]. This might be caused by the complicated use of E-Commerce. Moreover, its use is not considered imperative for business progress and is even less advertised among the MSMEs entrepreneurs. Other study that uses the Organizational Framework Technology approach in their analysis shows some factors that contribute to low E-Commerce adoption rate, such as, complexity of the use of E-Commerce, limited technology infrastructure and personnel's knowledge [5]. In the eye of Indonesians, the use of social media is limited only for entertainment purposes.

Based on that situation, this paper proposes a design of online marketplace for Indonesian MSMEs aimed to cater for their lack of awareness in information technology. At the beginning we analyze problems of MSMEs and E-Commerce in Indonesia. Then in the later sections we analyze the needs from three sides: MSMEs sellers, buyers, and marketplace features. This paper will address the following research question: How can online marketplace for Indonesian MSMEs be optimized with social media based interaction and MSMEs technological awareness ? This is done by adjusting the E-Commerce with the characteristics of Indonesian MSMEs, as well as the exploration of the use of social networking in the marketplace. Social media based interaction is aimed to serve as social influence for buying and to increase the ease of use.

1.1. Marketplace in Indonesia

Indonesian marketplaces are not restricted to MSMEs. The difficulties faced by MSME when using the existing features, is due to the limitations on Indonesian Marketplace, in terms of MSMEs characteristic. Marketplace in Indonesia is also yet to take full advantage of social networks, in terms of interaction with buyers. On the other hand, Indonesia has large number of social network users, making it a hugely potential market. The potential of E-Commerce market that Indonesia has is very large, amounting up to $ 134 billion, but its current transaction is only $ 0.9 billion [6]. Problems related to E-Commerce in Indonesia are largely made up of two things, customer trust and methods of payment.

Customer trust can be enhanced through the interaction on the web that can ensure data security of personal and validity of users. Yet trust defined as a complex concept, therefore no unanimous definition of trust exists. In Ecommerce environments, trust is a directional relationship between two parties that can be called trustor and trustee [7]. Interactions on the web should also provide detailed information about the transaction conduct, so that users are not confused, such as warranty information, clarity and validity of the seller address. E-Commerce web interactions should also facilitate rapid response, ease of search and testimonials from other buyers to gain confidence in prospective customers [8].

Most Indonesian E-Commerce users use the bank transfer for the transaction payment, but the process is taking longer time than it is using an online payment gateway. For future development, the E-Commerce market and users who start doing transaction via mobile gadgets, would demand for high transaction speed [6].

1.2. Social Media in Indonesia

The number of Facebook users in Indonesia is as many as 50,876,120, amounting to approximately 20.94% of Indonesian total population. Facebook user growth rate amounts to 7,974,060 users within the last 6 months in 2012. The users who access this media the most are those within the age range of 18-24 years [2]. As in the Twitter, Indonesia has the fifth largest number of users worldwide, with about 30 million users. In the number of tweet, its two cities rank #1 (Jakarta) and #6 (Bandung) [3]. This reveals that the Indonesians love to share. This is also supported by current communication technologies.

The use of social media in E-commerce is various. Its main function is as transmitter of information, e.g. the buyer "A" buy to sellers "X", then the buyer "A" tells the buyer "B". Furthermore, the buyer "B" will contact the seller "X". This increases the confidence of other buyers to buy items in a vendor. According to OTX's social media and the purchase intention research report in 2008, 70% of consumers visit social media websites such as message boards, social networking sites and blogs to get information about a company, a brand or a product. Further, nearly half (49%) of these consumers made purchase decision based on the information they gathered from social media sites [9].

Therefore, one of the functions of social media for E-Commerce is to improve buyer's confidence. Increasing buyer's confidence can be done through many ways, some of which are done in the form of customer interaction feedback from the buyer, the buyer's reviews and references from previous buyers [10]. Therefore, interactions done through social media have served as a new form of word-of-mouth communication to talk about products/services or providers and have proved to be critical for consumer decision making in e-commerce environments [9].

2. Problem of E-Commerce on Indonesian MSME

2.1. Implementation of E-Commerce

MSMEs are different from general businesses due to the following factors, i.e. limited capital, number of workers, level of competition and strict product specialization because there are enormous number of buyers and sellers [11]. Problems of MSMEs in Indonesia can be divided into two factors: internal and external [12]. The internal problem surrounding MSMEs use of E-Commerce is limited capital from the business owner or founder. There are other limitations in terms of employee formal education, business management skills, and mastery of information technology in enterprises. These have not led to an initiative to use it as a supporting effort. This, in turn, limits the business network and market penetration. The external problems are unsupportive business climate, in terms of difficulty to obtain business license and limited information. This hinders the development of business facilities and infrastructure. Due to lack of market access, the product cannot be competitively marketed to both national and international markets.

One effort to assist the MSME marketing makes use of the information technology in the form of E-Commerce. But in its development, there are many obstacles. The E-Commerce application run slower in MSMEs condition than it does than in bigger companies. There are some main factors inhibiting the implementation of E-Commerce in Indonesia based on the business environment [4].
- MSME does not have the human resources with the necessary understanding of the information technology
- MSME has not felt the need to use the E-Commerce or other similar IT products

In addition to these studies, there is also research that uses the Organizational Framework Technology approach in their analysis [5].
- even if E-Commerce is implemented, its usefulness within the MSMEs is still unknown
- complexity of the use of E-Commerce a barrier for MSMEs people who do not understand the technology
- for its successful implementation, the MSME business processes need to be adjusted
- limited technology infrastructure to support E-Commerce adoption for MSME
- allocation of funds and effort required in the development of E-Commerce is also deemed to be too big for MSMEs

2.2. Facebook Commerce

Facebook Commerce is one form of the concept of Social Commerce, with E-Commerce uses the Facebook platform to showcase products, shopping goods, and transaction directly in the Facebook [13]. Facebook itself in Indonesia has been used as an online store, utilizing Fans Page to sell products and for promotions. However, the transaction is still being done outside of Facebook. There is a CMS application form on Facebook to organize Fans Page to E-Commerce, such as Ecwid, Payvment and Big Commerce. The application connects the E-Commerce store with Facebook Fans Page. This application is an example of the Facebook Commerce, but in Indonesia these aren't implemented yet.

3. Solution Analysis

3.1. Indonesian Marketplace Analysis

Based on the analysis study to the marketplace in Indonesia, some functionality of marketplaces will be compared to get features commonly applied in Indonesia. The functionality comparison can better describe variations in the features and can accommodate the variation of the existing marketplace. This is done for the sake of ease of use and compatibility with the technology of urban and rural MSMEs in Indonesia.

- Account Administration
  Registration and login accounts of marketplace should use social networking accounts or account sites such as Facebook, which a lot of people already have.
- Shopping Process
  Categorization can be summed up as follows: Fashion, Computers & Cell Phones, Electronics, Health & Beauty, Home & Office Supplies, Art & Collectibles Souvenir, Hobbies & Sports Equipment, Agricultural & Gardening, Food & Beverage. Feature of advanced search items must be provided with the parameter of category, product price, and time of product release. Ordering products based on alphabetical order, price range and time of product release
- View Company
  Company profile should contain information of user ratings and reviews / testimonials of the company by the customer. Users are also given the tools to post recommendations to friends using social media.
- View Item
  Marketplace should provide sneak peek feature for its efficiency. Items must provided with various types of images and zoom features. Detailed specifications of the required items, descriptions, prices, ratings and statistics of item sold. Users can recommend products to their friends using the social networks. Users can leave comments and review products.
- Booking Process
  The shopping cart should be designed simple, enabling customer to easily get detailed transaction information. Transaction details that must exist are total expenditure, shipping cost, taxes or discount. Booking can also accommodate the need for pre-order, in some sellers.
- Payment Process
  Payment options provided a variety of options: internet banking and account transfers. Marketplace should have procedures for secure transactions, such as those from Verisign or SSL service.
- Delivery process
  An important feature is the flexible of delivery address. The delivery address can be different for each item ordered. During the process of filling out the address, the system must directly show the estimated shipping costs.
- Merchant's Page
  The identity of the store needs to be available, at least in the form of the store name and logo, if any. The design of merchant's page is not very important, the most important thing is setting the featured products in the store.
- Customer Dashboard

Buyers should be able to see the transaction in progress, transaction status, payment confirmation, and the history of transactions that have been carried out. Buyers can easily change profile and add a list of addresses for shipping purposes. Other features such as lists of wish list, number of points, incoming messages, history of comments and reviews, can be provided as well.

- Merchant Dashboard

  Merchants can view a list of orders in progress, order status, delivery confirmation and status, and the order history that has been resolved. Merchants can also see store and product sales statistic. Store profile settings should be kept simple and intuitive, so as not to confuse.

- Store Settings

  Store settings should be made simple and intuitive. Alternative option settings by uploading an Excel file (.xls), and an alternative for less stable internet connection in Indonesia must be available.

- Customer Service

  Marketplace should provide this feature for easy interaction and prompt response with buyers.

- Social Media

  Marketplace should also have social networking accounts to maintain communication with buyers, customer service, and promoting stores. Social networking accounts are also used to disseminate news or shopping tips.

3.2. Indonesian MSME Analysis

Analysis of the MSME conditions is done through interviews and questionnaires to two MSMEs in Bandung. Respondents are leather business in Parongpong and hardware startup in Bandung. Interviews were conducted to get an idea of the condition of SMEs and views on the marketplace as well as the use of information technology.

- Lack of trust in the online marketplace payment and shipping. This is due to product clarity and buyer's personal lack of trust.
- MSMEs prefer to make payment by account transfer via ATM, than they do by internet banking, mobile banking and credit cards.
- Sellers earn buyer trust through the recommendation from buyer's friend or clear address.
- Seller assumes that the most important part of the marketplace is fast response
- The important feature is the storefront store ratings and customer testimonials. While the important features for the display are product specifications and product images.
- MSMEs consider the most important features of the setting is the convenient store that includes a list of products and pictures.
- An important feature on the seller's profile page is transaction history and comments in the store.
- Most MSMEs already have a Facebook Fan Page and are interested in the concept of Facebook Commerce.
- MSMEs consider the use of information technology not expensive, but quite complicated to understand and use. MSMEs need technology that is more commonly used.
- Technology that has been commonly used by MSME is SMS text.
- MSMEs think Facebook can increase buying interest from prospective buyers, when prospective buyers receive recommendations from friends on social networks.

3.3. Indonesian Buyer Analysis

Analysis of the buyers through E-Commerce is done based on a questionnaire distributed via online, as well as data from surveys that have previously been done. The number of respondents involved as many as 122 people.

- Buyers rarely shop through online marketplace
- Buyers in the marketplace are less confident about the seller validity. There is concern regarding the delivery and quality of the goods sold.
- Buyers in marketplace are comfortable using the account transfer payments via ATM and Cash On Delivery (COD)
- Buyers have more confidence in the seller if there is recommendation from known friend, as well as some previous customer testimonials

- Most buyers need clear and complete information rather than fast response.
- Buyers need information on company profiles and company verification.
- Buyers need shopping cart feature, complete information of detailed transaction fee, taxes and other fees.
- In payment process, buyers want the simplicity on the confirmation and payment verification, as well as data security and online transaction information.
- In the user profile feature, buyers need information on transaction history that has been done.
- Almost all respondents have more than one social networking account that they frequently access, and 99% of the respondents own Facebook accounts.
- Most buyers do not know about Facebook Commerce.
- Buyers consider product features blog or article important to marketplace website.

The earlier survey done on 584 online shoppers [6], yields some information. Half of internet penetration in Indonesia is done from computer or laptop at home. Its use is mostly for news searching and social networking activities. Online shopping is mostly done for fashion and more than half of the payment transfer is done via the ATM. Buyers require sellers' validity using the attributes of the marketplace and recommendation from friend. This can be obtained easily through in the interaction in the social network.

4. Marketplace Solution

4.1. Architectural Design

Marketplace is connected to social networks such as Facebook and Twitter. Users are seller from MSMEs, and buyers from the general public. Interaction is conducted using the social networking account, from the initial registration in the marketplace until transactions in system. Sellers can integrate Facebook Fan Pages with the marketplace. Marketplace transactions can be done on the website and on Facebook. Buyers will receive invoice through e-mail and Facebook notification for payment information. Payment can be made through account transfer via ATM and Cash On Delivery (COD). Sellers will receive order notification and MSMEs updates via SMS and Facebook notification.

In the procedure of payment, buyer is required to perform confirmation procedures on the marketplace to change the transaction status. Then the marketplace will send notification to MSMEs when there is new order entry. Notification is provided in the form of SMS and Facebook notification, so that MSMEs can respond quickly. MSMEs then send the product directly to buyers and change the transaction status through the marketplace. Transaction costs are paid, taking into account the cost of shipping. If COD transaction is selected, the cost of shipping will be replaced as marketplace administration cost. Architecture diagram can be seen in Fig 1.

In the order process, buyer can choose the type of goods they order and the delivery method by selecting shipping address for each item, but the payment is still being done on one invoice. If the delivery is done by courier service, the JNE (private vendor) courier charges apply. JNE services are chosen, because the questionnaire shows that nearly 75% of respondents tend to use that service. JNE is also supported with good services and fast delivery and has an API call for charges calculation. Although JNE doesn't reach all of Indonesian region, but in almost every city it is very easy to find their office branch. When deliveries are done using the COD method, the administration fee will be charged on the amount of product with a specific price. E-Commerce marketplace, stand in form of applications on Facebook. These applications require the authorization from the user, to be able to have access to the application. In the application, user can view the products in the store, as in the marketplace website and can directly interact with the page of merchant Fans Page. Users can also make transactions directly in the Facebook application. Users also can share marketplace interaction events, such as product ratings, store ratings, product reviews, recommendations, and completed transaction, through social networks. The process of setting the store carried on the website, and its database can be used in the marketplace both on Facebook and website.
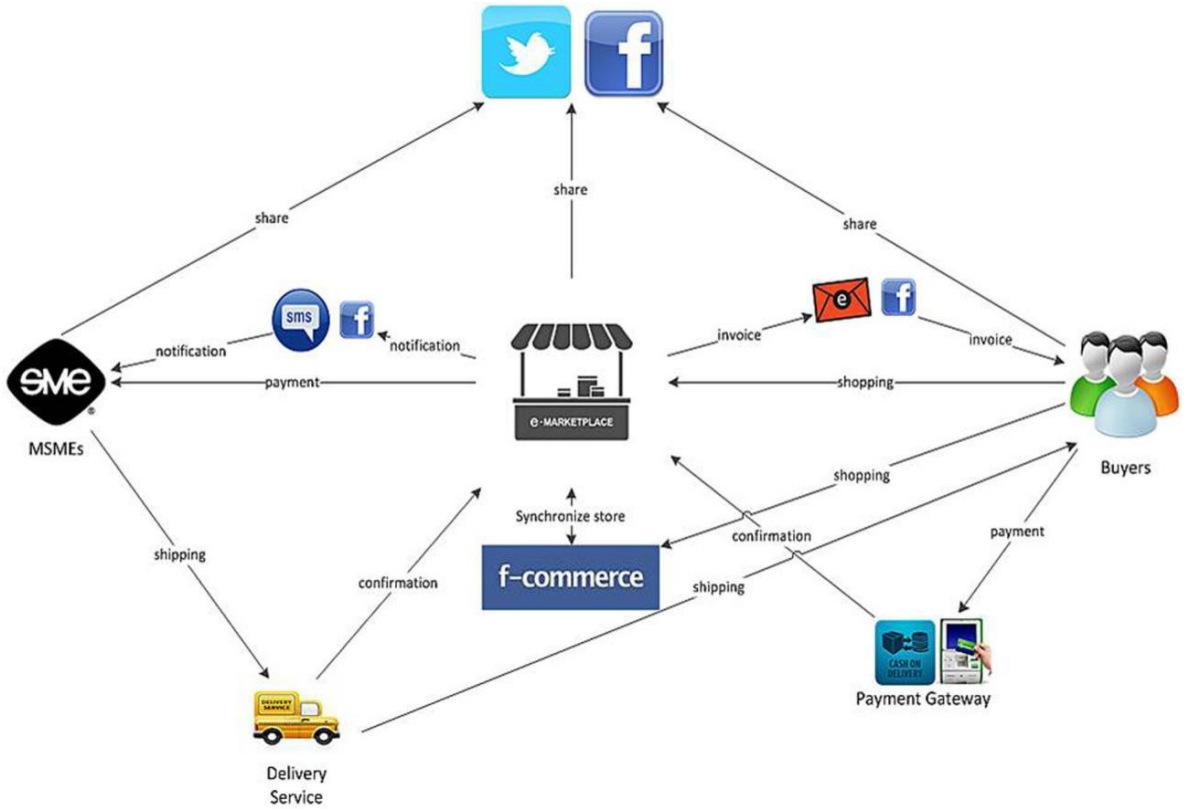
Fig. 1. Marketplace Interaction Diagram

4.2. Requirements List

Below is lists of requirements of the marketplace feature based previous analysis.

Table 1. List of Marketplace Functional Requirements

SRS-Id	Description
SRS-F-1	Login and registration with Facebook account
SRS-F-2	Users can view other users' profile and change their own profile
SRS-F-3	Sellers can set a list of products and choose the product showcase
SRS-F-4	Arrangements of store products can be made by using online forms or by uploading the .xls files with appropriate format.
SRS-F-5	Sellers can set up shop's profile and logo
SRS-F-6	Sellers can create articles for the shop
SRS-F-7	Users can search items
SRS-F-8	Users can sort the list of items
SRS-F-9	Buyers can give a rating and review of articles for shops or products that have been done in the previous transaction

SRS-F-10	Buyers can recommend a store or product via Facebook and Twitter
SRS-F-11	Features for zoom product images and product's sneak peek
SRS-F-12	Buyers can view item's detail information
SRS-F-13	Buyers can order goods
SRS-F-14	Buyers can use discount points earned from transactions for other transaction
SRS-F-15	Booking accommodates direct orders and process customization (pre-order)
SRS-F-16	Buyers receive a spending bill via e-mail and Facebook notification
SRS-F-17	Sellers receive notification of new order via SMS and Facebook notification
SRS-F-18	System can automatically calculate the shipping costs
SRS-F-19	Facebook application is connected to marketplace web database
SRS-F-20	Facebook applications can be used for order transactions directly

Table 2. List of Marketplace Non-Functional Requirements

SRS-Id	Description
SRS-NF-1	User interface should be intuitive and simple to understand
SRS-NF-2	Categories of goods: Fashion, Computers & Cell Phones, Electronics, Health & Beauty, Home & Office Supplies, Art & Collectibles Souvenir, Hobbies & Sports Equipment, Agricultural & Gardening, Food & Beverage
SRS-NF-3	Product settings page provide product description, product specifications and picture galleries.
SRS-NF-4	Buyer profile page shows transaction history, transaction status, payment confirmation, profile settings, history points, discounts, shipping address list, list of reviews and comments made.
SRS-NF-5	There are seller profile page order history, order status, shipment confirmation, store sales statistic, store profile settings, list comments entered, settings and showcased products.
SRS-NF-6	User can sort items by alphabet, price ranges and product release time
SRS-NF-7	Search items by category and price parameters.
SRS-NF-8	Detailed information includes total expenditure invoice, shipping costs, administrative costs, discounts and taxes
SRS-NF-9	Procedures of payment and confirmation are shown in the process
SRS-NF-10	Marketplace has a Facebook and Twitter account for promoting and sharing information
SRS-NF-11	There is attribute's level for buyer according to transaction history
SRS-NF-12	There is attribute's level for seller based on transaction history and ratings or reviews from buyers
SRS-NF-13	Buyers get discount points when making reviews, ratings and certain nominal amount transactions.

5. Conclusion and Future Works

This paper motivation comes from MSMEs problems and potential of social media, thus we propose an alternative of marketplace based on MSMEs needs and capabilities. Social media are used because they have a large number of users thus they provide a clear market for selling and increase trust in new form of word of mouth marketing. Word of mouth marketing can enhance social interactions and helps decision making in the transaction. Facebook and Twitter are selected because both social media commonly used by the majority of Indonesians and have the highest ease of use : In addition, Facebook allows a high variety of user interaction. Since MSMEs have very limited know-how about IT, the practical solution in this research involves the use of tools that they are already

familiar with, i.e. the use of SMS text and Office files in selling process. SMS notification used in the marketplace enables the sellers make a faster response. On the other hand, all forms of interaction done via Facebook Commerce aim to combine all virtual world interactions that have been formed within the social networking environment.

It is expected that this system design can facilitate MSMEs to expand the marketing through the use of technology and to increase confidence in decision making for buyers doing the transaction. This draft focuses only the use of technology and forms of interaction in the marketplace. Shipping and payment method is not discussed and touched both in the paper and in the design of the system, despite the fact that they both can also increase buyer confidence and seller convenience. Further development for this MSMEs marketplace must think more on ease of transaction and delivery method, because most marketplace only struggles on the front-end and does not think about how to handle logistic issues. However, the current design requirements prioritize on technology that ease of use for MSMEs and on thorough interactions with buyers through social media.

6. Acknowledgement

This online marketplace design is intended to be a part of ongoing final project currently being researched by Ahmad Anshorimuslim Syuhada in his bachelor study program in Informatics Engineering of Institut Teknologi Bandung. Based on the requirements and interaction diagram, final project is projected to go further by implementing it on real condition and real user test. Social media interaction will be fully implemented with Facebook Social Plugin and Facebook Application.

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