

TEKNOLOGI DIGITAL UNTUK PEMBERDAYAAN PEDAGANG SAYUR TRADISIONAL *

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Abstrak

Pesatnya pertumbuhan pedagang sayur online membuat orang tradisional khawatir tentang masa depan mereka, di mana kebangkrutan dalam waktu dekat, seperti beberapa department store dan bisnis konvensional lainnya. Teknologi digital yang diusulkan adalah alat bisnis online untuk penjual sayur tradisional yang bertujuan mendukung mereka untuk bersaing dengan pedagang sayur online, membangun manajemen perdagangan yang lebih baik, dan membekali mereka dengan pengembangan teknologi informasi dan kegunaan. Pelanggan dapat memesan sayuran ke penjual melalui aplikasi. Aplikasi akan memberi tahu penjual tentang pesanan yang sesuai, sehingga penjual itu dapat mengemas dan mengirimkan pesanan bersama dengan pesanan hari itu ke alamat yang benar. Potensi pasar aplikasi ini sangat besar, karena jumlah pelanggan potensial serta para penaja. Untuk membuatnya lebih efisien, aplikasi ini menerapkan pendekatan zonasi, di mana area pelanggan dibagi menjadi zona, berbeda dari jumlah populasi dan ukuran area. Dengan menerapkan metode ini, proses pengiriman dapat diatur sesuai dengan jalur pengiriman di setiap zona, sehingga meminimalkan biaya pengiriman kami. Implementasi aplikasi ini bertujuan untuk mengamankan pekerjaan penjual, melindungi mereka dari perkembangan yang tidak sehat dan pertumbuhan pedagang sayur online.

Kata kunci: pedagang sayur, aplikasi online, pelanggan, sistem zonasi.

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DIGITAL TECHNOLOGY FOR EMPOWERING TRADITIONAL VEGETABLE PEDDLER

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Abstract

Rapid growth of online vegetable traders make the traditional one worry about their future, in which the bankruptcy is in near future, like several department store and other conventional businesses. The proposed digital technology is an online business tool for traditional vegetable peddlers aimed at supporting them to compete with online vegetable traders, building a better trading management, and equip them with information technology development and usability. Customer could order vegetables to the peddler through an application. The application will notify peddlers about the corresponding order, thus the peddler could pack and deliver the orders along with that day's orders to the correct address. Market potential of this apps is highly large, due to the number of potential customers as well as the peddlers. To make it more efficient, this application implement zoning approach, in which customers areas are divided into several zone, differ from its number of population and area size. By implementing this method, the delivery process could be arranged in accordance with the shipping line in each zones, resulted in minimizing our shipping cost. The implementation of this application aimed to secure the peddlers job, protecting them from the unhealthy development and growth of online vegetable traders.

Keywords: vegetable peddler, online applications, customer, zoning.

INTRODUCTION

Vegetable traders in a residential neighborhood such as Joyogrand, Lowokwaru District and Griya Permata Alam, Karangploso District, Malang consists of two different type, vegetable peddlers, which is known as *mlijo*, that sell their goods by moving from one place to another in an area, and settled traders, which has a permanent stalls. These vegetable traders on average have limited capital so they do not have a high level of trading competition. They only buy vegetables from the wholesale market and resell them by going around or selling them at their stalls. Their living standard are relatively constant, without no increasing rate, since they do not have the ability either in capital, knowledge or technology to add facilities to increase their turnover.

On the other hand, with the rapid growth of digital technology, almost all of our needs can be fulfilled online. Many conventional businessman has converted their traditional based business into online-based to be able to avoid bankruptcy. With the rise of online business, now many online vegetable traders have emerged and there are also many people who enjoy the convenience when shopping for vegetables online (Chamhuri & Batt, 2013). With an online vegetable trader, people no longer need to go to the market / vegetable stalls when they need vegetables; they just need to order via their mobile phones.

The emergence of online vegetable traders is a serious problem for traditional vegetable traders; they are not likely to migrate to online businesses because of their limited capital and technological knowledge. The rise of online vegetable sellers does not rule out the possibility of traditional vegetable traders going out of business because of the limitations they have.



Figure 1. Vegetable peddler

Figure 2.
Settled Vegetable Trader



Both traditional vegetable traders, vegetable peddlers and settled traders currently rely on buyers from their loyal customers. Figure 1 shows one vegetable vendor circumference, he has a fixed route that has been set in accordance with the trajectory of his ordinary trading route, while the settled traders need the customer around their area or that is in passing to come directly to their stall as shown in Figure 2.

The problem that arises in this system is limited buyers; trading transactions will only occur if the two parties meet directly. If a vegetable peddler is passing the area but the prospective buyer does not know, then the sale and purchase transaction will not take place, while for settled vegetable traders will receive a sale and purchase transaction if the buyer has time to visit the trader. Noting the above facts and the rise of online business, this service will provide an online vegetable buying and selling application named *Mlijo Online* to help vegetable traders find potential buyers.

Problems faced by our partners in this community service include the following: 1) Limited number of buyers, due to the trading can occur only if there is a direct meeting between the seller and the buyer; 2) The buyer must wait for the arrival of a vegetable peddler whose schedule is uncertain or the buyer must visit the food stall / vegetable sales location; 3) The buyer must provide specific time to conduct the transaction; 4) The emerging of online vegetable traders who use digital technology; 5) Vegetable traders still have limited knowledge and capital to implement digital technology.

The proposed online *mlijo* application is a development of a web-based application resulting from the final assignment of D3 Telecommunication Engineering Students in State Polytechnic of Malang and has been developed into an android-based application in an innovation research program funded by the State Polytechnic of Malang via DIPA fund. This application is equipped with the latest GPS technology that is still not widely used by the other online trading systems to find out the exact location of traditional vegetable traders / couriers or buyers so that the closest distance could be chosen for delivery route. This application is expected to be a solution to the problems faced by vegetable peddlers and buyers in conducting trading transactions. The advantage of this online *mlijo* application is that buyers can shop through their android devices. There is a map display and location from GPS that can show the location of the nearest *Mlijo*. Buyers can make transactions through the application thus efficient in time and make their daily activity easier. On the other hand, vegetable traders could promote their goods easily, such as giving discount, pay with purchase, etc.

The proposed android-based vegetable trading application has an online vegetable messaging service, deposit confirmation, provide suggestions and view user profile data. It aims to facilitate the vegetable trading that can be done easier through a smartphone. Our application has two different types, namely client and server. The client side is built for Android-based mobile devices using the HTML programming language, JavaScript with the jQuery framework, and data transfer using AJAX, while the server side is built with the PHP programming language with the CodeIgniter framework and database management using MySQL (Malik, 2014).

The integration of location based service aims to improve the service for both customers and traders. (Agustia, 2016.) proposed a Location Based Service application on an Android mobile device that is able to help to find information and tourism location from the user's location and the route that can be taken to the tourism location.

(Gunawan & Purnama, 2015) proposed an application that can help users to find information on tourist locations in West Nusa Tenggara. This application uses GPS connected to google maps which can show the location and the closest route to the tourist location. Embedded GPS and user location as information

to the seller could be used to find the best route to reach customers, such that it could facilitate traders to deliver the groceries (Sultana, Enayet, & Mouri, 2015).

The origin *mlijo* online application that was the initial idea of this community service has been granted an Intellectual Property Rights from the Director General of Intellectual Property Rights with a Certificate of Registration. The number and date of application: EC00201703129, September 6, 2017. This online *mlijo* application is originally web-based software, which was developed into an android application where the user must be connected to an internet network with a certain bandwidth and has a sufficient data package so that the GPS feature installed on the application can function perfectly. The greater the bandwidth, the application access, location map from GPS, as well as the display of available product images can be quickly displayed (Masudia, Sarosa, Rakhmania, Muhammad, & Putri, 2018).

Several drawbacks on previous application are the appearance may be less attractive, but the features of this application are still rare in other applications. Second, the previous application search system on vegetable products are still scattered on the scope of the Malang, it makes the competition among sellers of vegetables to be high and impact on a far delivery distance, thus the delivery fee is more expensive. Third, when the purchase is made to a settled vegetable trader then it must find a vegetable peddler who is willing to take vegetables and deliver to the buyer's house, this might make the buying and selling process take a longer time.

METHODS

This community service was done to assist and protect the greengrocer tradusional offered several solutions including: 1) Make improvements featured on previous applications to overcome the weaknesses that exist, namely the addition of courier facilities are in applications not previously exist, so greengrocer settled can take advantage of this application with the help of the courier provided by the system and the addition of online payment features involving third parties, to facilitate transactions; 2) Promoting applications to vegetable traders and buyers to understand the use of the application being developed; 3) Run the proposed digital technology to become an online business for the traders who sign up.

In this community service, we offer several solutions to help traditional vegetable traders, such as improve previous version of our application by adding courier feature so that the settled vegetable traders could use this feature to deliver their goods. We also embedded online payment system involving third parties to facilitate transactions. Promoting this application to both vegetable traders and customers to make them have a better understanding on this application and run the proposed digital technology as a basis for traditional vegetable traders to develop and migrate into a online based business are also the solution that we offer.

RESULTS AND DISCUSSION

To support this community service, an Andorid-based application has been developed with new features embedded so that the decomposition of the online *mlijo* application is shown in Figure 3.

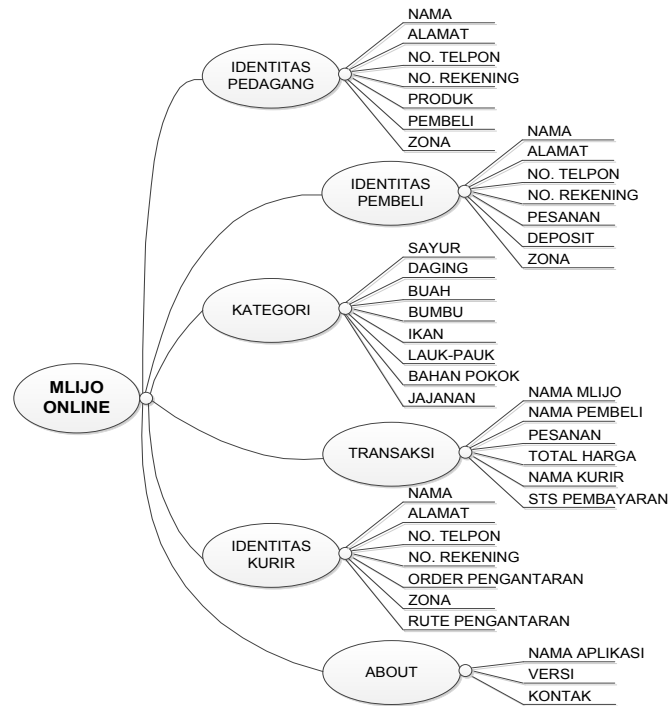


Figure 3. Decomposition of *Mlijo* Online Application

Figure 4 shows the category menu on our application. Order details and available zoning are shown in Figure 5 and 6, respectively.

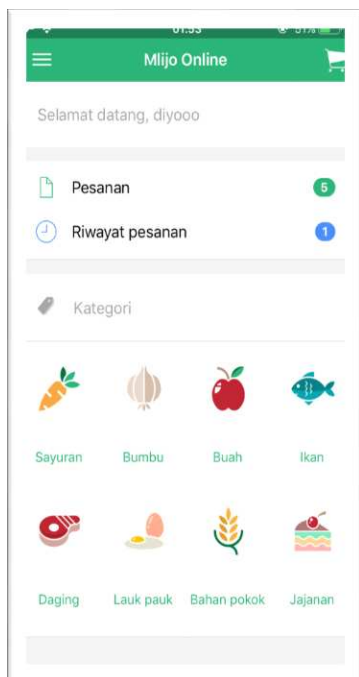


Figure 4. Menu Category Appearance

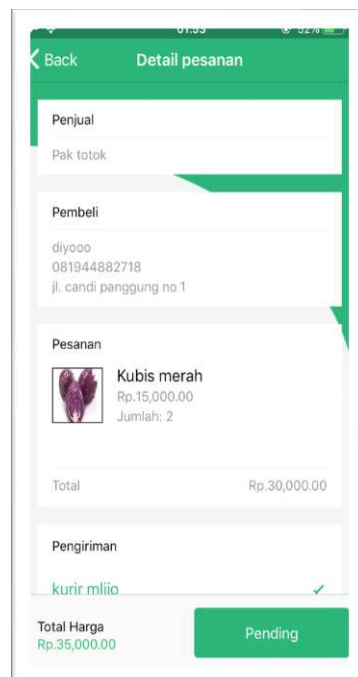


Figure 5. Order Details

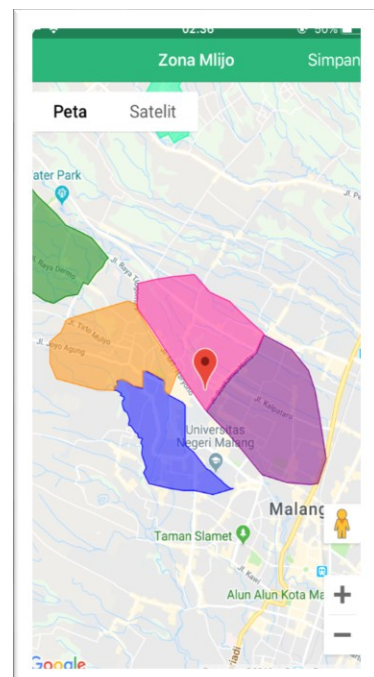


Figure 6. Available Zonas

The socialization has been carried out by inviting 5 traders and 15 prospective buyers. The action took place at State Polytechnic of Malang. At the end of the meeting, we asked the participants to fill the questionnaire. Based on the questionnaire, the traders are very enthusiastic and they hope the application could be implemented in immediate future. The prospective buyers, on the other hand, also expecting the implementation of this system, in which they hope the quality and quantity of the goods is managed and checked so that the buyers could receive a good quality goods as they expected. Figure 7 shows several socialization participants (traders and prospective buyers) with the community service team. Figure 8 shows the enthusiasm of the participants listening to an explanation of the material about the *mlijo* online application from the team leader. Figure 9 shows the enthusiasm of participants to test the application when the *mlijo* online application is being held.



Figure 7. Socialization participants with community service team



Figure 8.
Participants' enthusiasm during socialization



Figure 9.
Participants enthusiasm during application testing section

However, we still need to prepare several technical aspects like the perfection of several features such that there are less problems arised during the implementation. In addition, to facilitate transactions and accountability, improvements are still being made to the transaction system and readiness for cooperation with banks.

CONCLUSION

This community service has been carried out with the results in the form of an online mlijo application, which is an online vegetable trading application with several vegetable traders in the Joyogrand Housing and Griya Permata Alam Malang area as members. The enthusiasm of the participants to follow the explanation of application and testing the application shows that this activity is needed, hoping that this online based business for traditional vegetable peddler will be officially launched once the agreements with banks is signed. This application uses the zoning system and the shortest path algorithm when delivering orders to reduce shipping costs such that it could be able to provide competitive prices with existing online vegetable traders.

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