IMPLEMENTATION OF E-COMMODITY FOR FARMERS IN ORDER TO FACILITATE THE DISTRIBUTION OF CROPS IN SUKAPURA VILLAGE, KERTASARI DISTRICT, BANDUNG REGENCY

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ABSTRACT

This research was conducted at the Vegetable Farmer Community in Sukapura Village, Kertasari District, Bandung Regency. This study aims to design a distribution system for agricultural products that involves elements of information technology in the form of designing an e-Commodity system. The e-Commodity system can be said to use internet technology to improve and change the main business processes, especially in terms of selling vegetable farm products. The e-Commodity system in addition to cutting distribution channels from farmers to consumers can also provide benefits in managing agricultural products. The approach method used in the distribution system of agricultural products that involves elements of information technology in the form of designing an e-Commodity system in the Vegetable Farmer Community in Sukapura Village, Kertasari District, Bandung Regency uses the Development Live Cycle System (SDLC) as a framework for designing a distribution system for agricultural products that involves information technology elements. The steps/stages are as follows: System Analysis and Design, Design, Application/Coding Development, Testing and Implementation, Maintenance. The findings of this study can be used as reference material in designing a distribution system for agricultural products that involves elements of information technology in the form of designing an e-Commodity system, this aims to collaborate between academia, industry and government in facilitating the distribution of agricultural products and increasing decent work and while at the same time increasing sustainable economic growth by designing and socializing the use of the e-Commodity System that can manage the distribution of agricultural products from upstream to downstream. This research is expected to be a reference in designing a distribution system for agricultural products that involves elements of information technology so that it is hoped that the existence of this e-Commodity System can provide convenience in the distribution of agricultural products and can have an impact on improving welfare for farmers.

Keywords: E-Commodity, Information Technology, System, Socialization

ABSTRAK

Penelitian ini dilakukan pada Komunitas Petani Sayuran di Desa Sukapura, Kecamatan Kertasari, Kabupaten Bandung. Penelitian ini bertujuan untuk merancang sistem distribusi hasil pertanian yang melibatkan unsur teknologi informasi berupa perancangan sistem e-Commodity. Sistem e-Commodity dapat dikatakan menggunakan teknologi internet untuk

meningkatkan dan mengubah proses bisnis utama terutama dalam hal penjualan produk pertanian sayuran. Sistem e-Commodity selain memotong jalur distribusi dari petani ke konsumen juga dapat memberikan keuntungan dalam pengelolaan produk pertanian. Metode pendekatan yang digunakan dalam sistem distribusi hasil pertanian yang melibatkan unsur teknologi informasi berupa perancangan sistem e-Commodity pada Komunitas Tani Sayuran di Desa Sukapura Kecamatan Kertasari Kabupaten Bandung menggunakan metode Development Live Cycle System (SDLC). sebagai kerangka perancangan sistem distribusi hasil pertanian yang melibatkan unsur teknologi informasi. Langkah-langkah/tahapannya adalah sebagai berikut: Analisis dan Perancangan Sistem, Perancangan, Pengembangan Aplikasi/Coding, Pengujian dan Implementasi, Pemeliharaan. Temuan penelitian ini dapat dijadikan bahan acuan dalam merancang sistem distribusi hasil pertanian yang melibatkan unsur teknologi informasi berupa perancangan sistem e-Commodity, hal ini bertujuan untuk menjalin kerjasama antara akademisi, industri dan pemerintah dalam memperlancar distribusi produk pertanian dan peningkatan pekerjaan yang layak serta pada saat yang sama meningkatkan pertumbuhan ekonomi yang berkelanjutan dengan merancang dan mensosialisasikan penggunaan Sistem e-Commodity yang dapat mengelola distribusi hasil pertanian dari hulu hingga hilir. Penelitian ini diharapkan dapat menjadi acuan dalam merancang suatu sistem distribusi hasil pertanian yang melibatkan unsur teknologi informasi sehingga diharapkan dengan adanya Sistem e-Commodity ini dapat memberikan kemudahan dalam pendistribusian hasil pertanian dan dapat memberikan dampak dalam meningkatkan kesejahteraan petani.
Kata kunci: E-Commodity, Teknologi Informasi, Sistem, Sosialisasi

1. INTRODUCTION

Technological developments from time to time have developed very rapidly along with the development of information technology. This is accompanied by sophisticated computer technology that has reached its development in every field of work and in every level of society. Basically, information technology was developed to make it easier for the public in general to get information that is fit for consumption. By utilizing information technology, it is hoped that it can assist in the work, processing/processing of important data as expected by the community.

Commodities are goods that can be traded for profit or can be exchanged for other goods of the same value. Quality for commodities is basically the same general uniform for all producers, although there are often slight differences

In the import-export trade, commodities are generally divided into four types, namely:

1. Metal commodities in the form of mineral products such as gold, silver, platinum, nickel, copper, zinc, and so on.
2. Agricultural commodities are commodities originating from agricultural and plantation products such as rice, wheat, rubber, palm oil, cotton, soybeans, corn, coffee, and so on.
3. Livestock commodities include all commodities that include live livestock and their derivative products such as meat, milk, cheese, and so on. Energy commodities are commodities that

function as energy sources such as oil, gas, electricity, and so on

Agricultural commodities in Sukapura Village, Kertasari District, Bandung Regency have not been able to benefit local farmers in the Ciparay area, Bandung Regency.

This problem lies in the length of the trade chain from farmers to consumers. Farmers' produce before reaching consumers, agricultural products always go through intermediaries or collectors, from collectors to the main market and then distributed to retailers in traditional markets, for example, cayenne pepper if it has been sold in traditional markets is pegged at Rp15 000 per kilogram, whereas from the farmer level it is only sold for Rp. 6,000 per kg.

If only the distribution channels could be cut, the price from the farmer level could be higher. The challenge for farmers is actually quite heavy, because they have to pay for maintenance, not to mention the cost of buying fertilizers and plant medicines. With the price of chili being only Rp. 6,000 per kg, it is actually not able to cover the costs from planting to harvest.

To overcome this, collaboration from academia, industry and government is needed in facilitating the distribution of agricultural products and increasing decent work and at the same time increasing sustainable economic growth by designing and socializing the use of the e-Commodity System that can manage the distribution of agricultural products from upstream to downstream. so it is hoped that the existence of this e-Commodity System can provide convenience in the distribution of agricultural products and can have an impact on increasing welfare for farmers.

Sukapura Village, Kertasari Sub-district, is one of the villages that is the object of conducting research as well as socializing the e-Commodity System, known as the Bandung Regency Product Information System (SIDUDA). Sukapura Village has the following regional data:

Figure 1. Sukapura Village Area
Kertasari District, Bandung Regency
Source: Sukapura Village Office

For the results regarding the population data of Sukapura Village, I got the results of population data in the form of age, gender, population of Ciwaruga Village, occupation, education, citizen status and religion with the following details:

1. The total population of Ciwaruga Village is 4,292 people.
2. With the Distribution of Population Based on Gender:
3. 3.55% Male population
4. 45% Female population

Based on the description above, a number of problems can be identified for farmers in Sukapura Village, namely:

1. Currently the distribution pattern of agricultural products does not involve information technology factors, so that the distribution path of agricultural products is quite long.
2. There is no grouping of databases of farmers and land cultivated by farmers in Sukapura Village to be used as information material as needed.
3. The role of information technology does not yet exist in terms of the distribution of agricultural products, in order to facilitate distribution and at the same time have an impact on improving the standard of living of farmers.

Seeing the identification of problems with these partners, other efforts are needed by the Sukapura Village Office, so that each farmer can involve himself or contribute directly/indirectly to the context of social community science and technology development. The following justifications need to be prioritized to resolve the above problems:

1. It is necessary to develop e-Commodity in order to provide efforts to help facilitate the process of distributing agricultural products.
2. Through the e-Commodity System, it is hoped that the Farmers and the Chamber of Commerce and Industry of Bandung City will be able to manage commodities and agricultural products more easily.
3. Through the e-Commodity System, Farmers can easily predict farm yields easily.
4. It is planned to create a geographic information system to be able to classify the needs of village officials in order to display information optimally.

2. LITERATURE REVIEW

1. Commodities

In the dictionary, according to the Big Indonesian Dictionary, Commodities are main merchandise, commercial goods, local produce and crafts that can be used as exports or raw materials that can be classified according to their quality according to international trade standards, for example wheat, rubber, coffee. Leading commodities are potential commodities that are considered to be able to be competed with similar products in other areas, because in addition to having a comparative advantage,

have high business efficiency, Nadira (2014: 18). According to the Agricultural Research and Development Agency (2003), leading commodities are the mainstay commodities that have a strategic position to be developed in an area whose accuracy is based on various considerations, both technically (climatic soil conditions) as well as social, economic and institutional (technological mastery, resource capabilities, human, infrastructure, and local socio-cultural conditions.

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2. Definition of e-Commodity

The e-Commodity system can be said to use internet technology to improve and change the main business processes, especially in terms of selling vegetable farm products. The e-Commodity system in addition to cutting distribution channels.

1. Definition of Distribution

Definition of Distribution according to the Big Indonesian Dictionary, distribution is intended as a distributor (division, delivery) to several people or several places. Another thing expressed by

Tjiptono (2008:185) that distribution is a marketing activity that seeks to expedite and facilitate the delivery of goods and services from producers to consumers, so that their use is in accordance with what is needed (type, quantity, price, place, and when needed). Meanwhile, Philip Kotler (2007: 122) states that distribution channels are organizational devices that depend on the processes that make products or services to be used or consumed by consumers or business users. So the author can conclude that distribution is a process of distributing goods and services to other parties. In distribution activities, it is necessary to have facilities and objectives so that distribution activities can run and be carried out properly.

2. Definition of Farmers

The term "farmer" from many social academic circles will provide various meanings and definitions. The figure of a farmer has many dimensions, so that various groups give views according to the dominant characteristics. Moore in his book Social Origins of Dictatorship and Democracy and Peasant in the Making of the Modern World (1966:243) notes three characteristics of peasants, namely: legal subordination, cultural specificity, and de facto ownership of land. In general, the definition of a farmer is someone who works to fulfill his living needs from agricultural business activities, whether in the form of agricultural businesses in the fields of food crops, horticulture, plantations, animal husbandry, and fisheries.

3. Definition of Harvest

Harvesting is a series of processes in plantations or agriculture carried out to collect and obtain fruit from the harvest that will be allocated either directly to distributors or direct consumers (Lestari, 2017). Where before the harvest there is a pre-harvest process which is preparation before the harvest process, where in this process the quality of the harvest must be taken into account at the right time in the right way before

harvesting. And also the post-harvest process which is the process after harvesting, where in this process the harvester will clean up the former harvest and prepare the land to be ready to plant the next seedling. So that each of these processes has a series of units that are important enough to maintain and improve the quality of current and future harvests (Surya, 2016).

4. **Definition of Prototype Model**

Prototype method according to Pressman (2002:40), starting with collect needs. Developers and clients meet to define the overall objectives of the software, identify all requirements in terms of input and output formats and interface descriptions, then do a quick design. From the results of the rapid design, testing and evaluation will be carried out. A complete explanation of the prototype method will be explained in Figure 2 below:

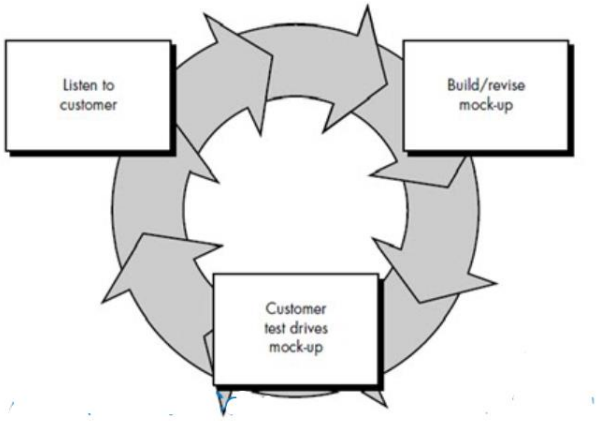

Figure 2. Prototype Development Model (Pressman 2002)

3. METHOD

The stages of the prototyping software development model in the development of e-commodity can be described as follows:

1. Collecting Information from Costomers
2. Creating Prototype software, in which it describes the making of a "quick design" according to the design.
3. Evaluation of the prototype is the third stage that can describe the prototype to the customer as expected by the customer at the beginning.

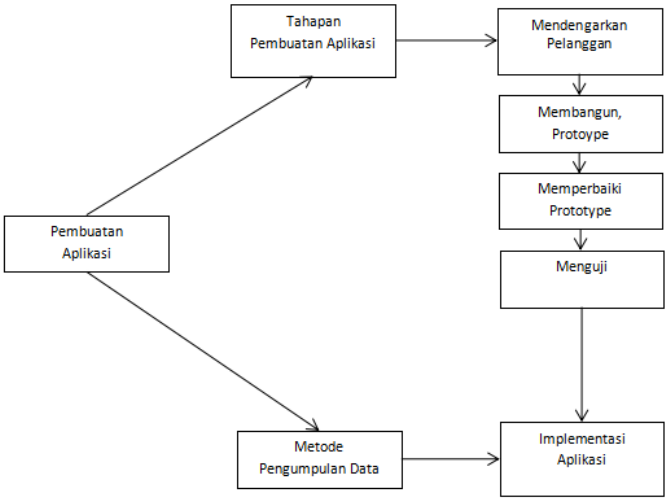

Figure 3. Software Development Method

4. RESULT AND DISCUSSION

The stages or steps to be achieved in building this application can be described as follows:

1. **Listening to Customers (System Analysis)**

   The problem found in the farming community is that there is no media in the form of applications that can provide effective distribution of farmers' crops.

2. **Design**

   a. **Use Case Diagram**

   Use case diagrams are functional requirements that are described from the point of view of the user of a system. Use cases answer questions about how actors interact with the system and describe the actions that the system will take.

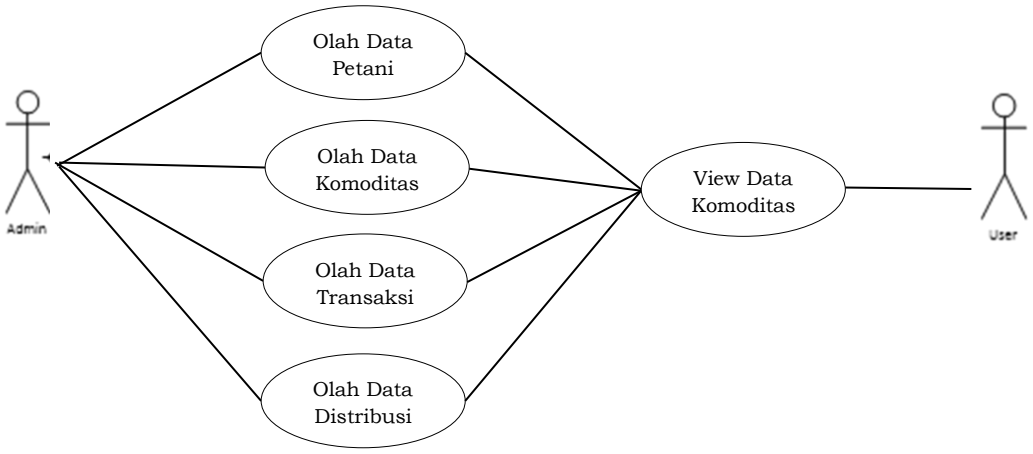

Figure 4. Use Case Diagram

b. User Interface

The login interface is the initial interface that provides an explanation of the

authority of the application user.

Figure 5. Login Menu

The price list interface is an interface that explains the current commodity prices, while the Add Commodity Product Interface is an interface for adding new products from commodities produced by farmers.

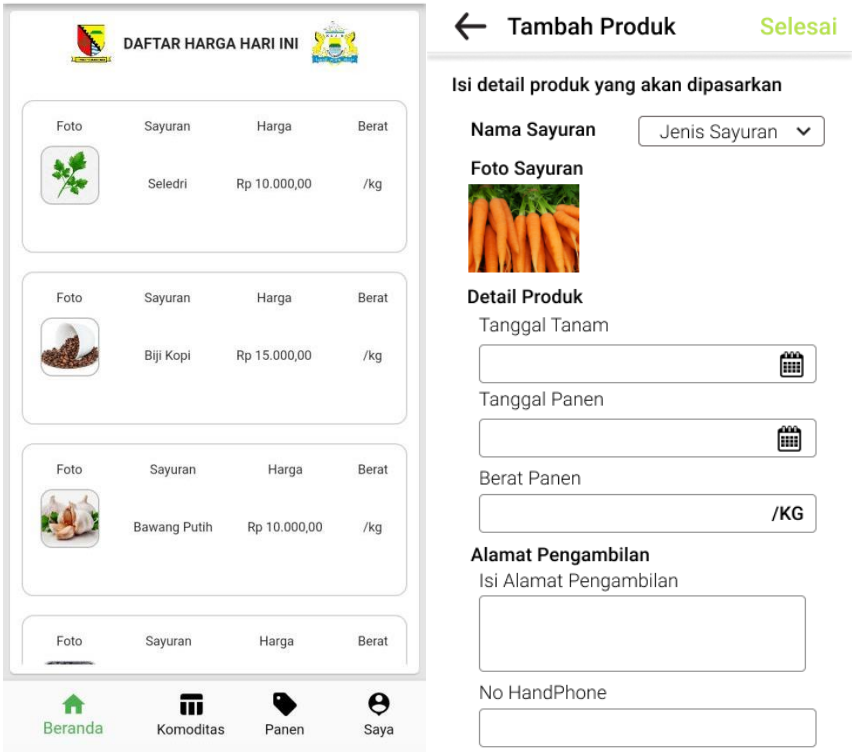

Figure 6. The price list Menu

The distribution or product sales interface is a menu that explains the products that will be distributed to the government, in this case the Bandung City Chamber of Commerce and Industry, which will then take and record the distribution of this product through this application.

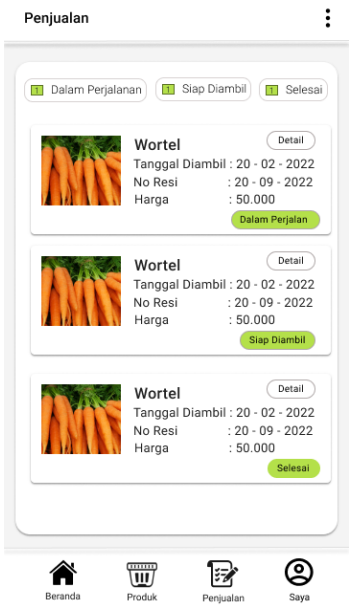

Figure 7. The Distribution Menu

Interface for the recapitulation of the distribution of farmer's commodity products is an interface that explains the recapitulation of the distribution of all farmer's commodity products that have been recorded into the database and can be used as a distribution report on a period basis.

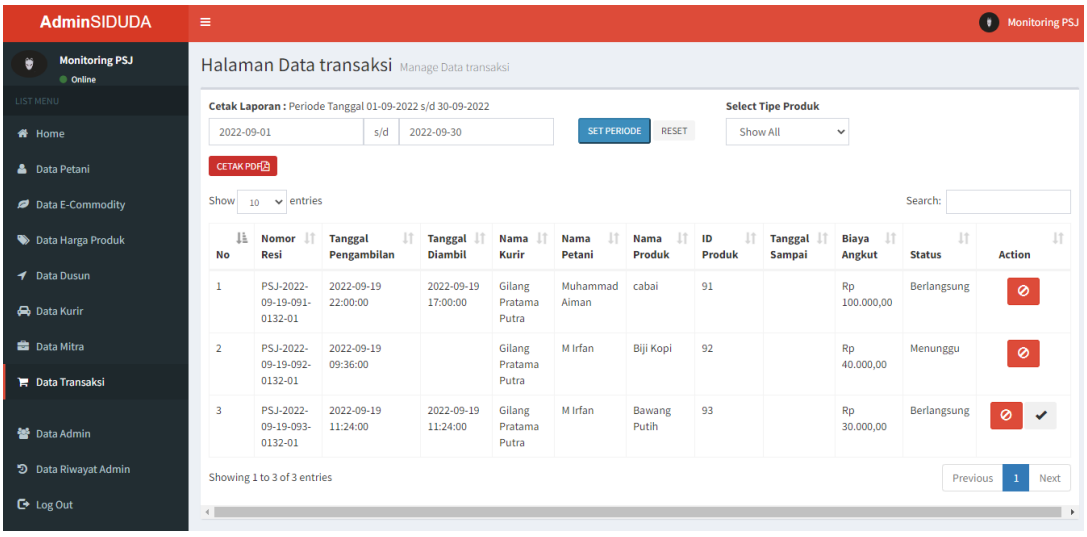

Figure 8. The distribution of farmer's commodity products Menu

Within a month, as many as 100 farmers used the e-commodity application for the sale and distribution of their harvested commodity products. Users who have access to this application are divided into several categories, including: by age which is divided into several age ranges: 25-29, 30-39, 40-49 and age > 50 years, the second category is gender: Male and female , for the third category of media: Manual and Web based, the above categories are the categories used in

accessing the website, which can be concluded according to the table below:

Table 1: Sample 1

Criteria	Category	Number	Percentage
Visitors (Gender)	Male	42	42%
	Female	58	58%
Visitors (Age Group)	25-29	15	15%
	30-39	25	25%
	40-49	35	35%
	>50	25	25%
Media Information	Manual	15	15%
	Web Based	85	85%

5. CONCLUSION

Based on the description that has been explained in stages, it can be concluded that related to application media that assist farmers in distributing their crops, among others:

1. The management system for the distribution of farmers' crops is getting better, with the trimming of the distribution system to farmers directly to suppliers, it will have an impact on selling farmers' agricultural products to increase financially and of course it's easier.
2. Database of farmers and managed land as well as better results in archiving and documentation, as well as making it easier for Sukapura Village officials to manage data related to commodity yields.
3. Farmers are easy to manage the distribution of their harvests, they are no longer burdened with crop yields that accumulate and fail due to being stored for too long due to below-standard selling prices. .
4. Farmers will focus more on improving the quality of harvests, because the management of agricultural products from the beginning of planting to distribution has been assisted by information technology.
5. The current affordable price of information technology (computers) that can be owned by the community, so that the motivation and support to participate in the use of ICT will increase

6. REFERENCE

Pressman, R.S . (2010). Software Engineering. Newyork: McGraw-Hill.

Kendall E. Kenneth . (2010). Analisis dan Perancangan Sistem. Jakarta: PT. Indeks

Welling, Luke & Laura Thomson (2009). PHP dan MySQL Web Development (Developer's Library). (4th Edition) : Addison Wesley Longman.

F. Rahardi. 2004. Kiat Memilih Komoditas Agro. Agro Media Pustaka. Jakarta

Ritayani Iyan. 2014. Analisis Komoditas Unggulan Sektor Pertanian Di Wilayah Sumatera. Jurnal Sosial Ekonomi Pembangunan. Volume 4. Nomor 11. Maret 2014. Fakultas Ekonomi. Universitas Riau

Fitria. 2013. Jurnal Aplikasi E-government Pada Desa Jatirejo.

Henny Hendarti, Nurlina. Jurnal Perancangan aplikisi pembuatan kartu tanda penduduk berbasis web dapa kodya bekasi, 2008.

Basuki, Sulistyo. (2010). Metode Penelitian. Jakarta: Penaku

Sulitiani Anisa. 2009. Jurnal Peranan E-government Dalam Rangka Mewujudkan Potensi dalam Desa Karangsari.

Iin Sofiani, Andi Iwan Nurhidayat (2019). SiRancang Bangun Aplikasi E-Marketplace Hasil Pertanian Berbasis Website dengan Menggunakan Framework Codeigniter.