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Development of E-Marketplace in Department of Agriculture Food Crops and Horticulture as a Means to Expand The Market of Processed Food

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Abstract- Department of Agriculture Food Crops and Horticulture has a task to develop an activity to increase the production of agriculture and horticulture, and also develop the business of food crops and horticulture. One of its partner to do the task is Aspemako. Aspemako is an association of business of processed food. In this paper we take a case in Gunung Kidul District. Currently in marketing part, the Aspemako puts its products in a tent in front of the Department, so the market is very small and the business becomes sluggish. In that way Aspemako needs a new means to expand the market to increase their business. The development of the e-marketplace follows water fall process model, like analysis, design, implementation and testing. From the testing it is sure that the e-marketplace is running well and it is a decent tool for Aspemako to increase the market of processed food.

Keywords—e-marketplace; processed food; aspemako

I. INTRODUCTION

One of the goal Department of Agriculture Food Crops and Horticulture in Indonesia is to develop a sustainable activity to increase the production of agriculture and horticulture, to make a good product of food corps and horticulture and also develop the business of food crops and horticulture [1]. In this paper we take a case of Gunung Kidul District. One of its partner to achieve the goal is Aspemako. Aspemako is an association of business of processed food. Aspemako in Gunung Kidul District currently has 60 member. All of them doing a business of processed food. Every Friday morning Aspemato opens a traditional market of processed food in front of Department of Agriculture Food Crops and Horticulture office, to sell their processed food [2]. In that way their turnover is limited, because the consumer are only from its surrounding neighborhood. Their processed food has a specific taste and has a potential to be sold in the global market.

Itom that situation, we can say that actually, Aspemako and Department of Agriculture Food Crops and Horticulture together needs a means to increase their business and hence their turnover. Electronic marketplaces (e-marketplaces) are examples of new business practices that have emerged to facilitate specific e-commerce processes. E-marketplaces are commonly defined as a central marketplace connecting buyers and suppliers (or sellers) electronically to facilitate exchanges of information, goods and services [3].

Daniel, E M, Hoxmeier, J. White, A, Smart, A [4] have proposed a framework that describes the factors that influence the sustainability of e-marketplaces. These factors are the macroeconomic and regulatory level, the industry level, the individual firm level. Xiaoping, Z, Chunxia Wu, Dong Tian, Xiaoshuan Zhang [5] have conclused that B2B E-Marketplace process in agriculture product marketing can be analyze the benefit and critical factors in problem agriculture marketing. Agung [6] has made an application for buying and selling on e-marketplace. It has features for a buyer like shopping cart, multi transaction, and refund. For a seller it has features like processing product, processing transaction, statistic, and payout. For administration, it has feature like registration for buyer and seller, moderation processing refund and payout. Rudi [7] has made an emarketplace for online auction, it has features like searching a product offering (offer to buy and offer to sell). Novaldy [8] has made an e-marketplace that has a feature like buyer can buy from a different seller with a single payment. Bukalapak [9] is an application of e-marketplace for public, anyone can joint Bukalapak as a buyer or a consumer. They can sell anything an also they can buy anything. Bukalapak, one of the biggest marketplaces in Indonesia, facilitates about IDR 500 million (\$41,000) worth of transactions every day in 2014 [10]. In particulari, 2 nita and Miranda [11] said that recognize e-marketplace is no easy task for managers to attoh a competitive advantage that will endure over time. they has iden 2 ied four key factors in maintaining a high-quality level, managers of B2B e-marketplaces should pay special attention: reliability and security, the usefulness of the information provided, value-added services, and efficiency.

From the above explanation, it is clear that there is not yet marketplace for Aspemako that is exclusive for processed

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food tom Gunung Kidul District. This paper will talk about the development of e-marketplace in Department of Agriculture Food Crops and Horticulture as a means to Expand the market of processed food in Gunung Kidul District.

II. REQUIREMENT ANALYSIS

In this part we will talk about requirement analysis for emarketplace in Department of Agriculture Food Crops and Horticulture as a means to Expand the market of processed food in Gunung Kidul district.

A. User Requirement analysis

- Administrator of the e-marketplace has an access to all data, so that he can control all the system. Administrator for this e-marketplace is Department of Agriculture Food Crops and Horticulture.
- Seller, is a member of Aspemako who's already registered in the system. He/She can do processing product, order, and delivery of the product.
- Buyer, has an ability to search a product, has a shopping cart, confirmation of payment, and see the status of shipment.

B. System Requirement Analysis

- Functional requirement like login, processing member, product, order, payment, and shipment. It also has a forum to communicate between all the registered user.
- Nonfunctional requirements like it can be used with any browser, can be accessed by anyone from anywhere and anytime

III. DESIGN

Design of e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul follows object oriented design, so it has use case diagram, activity diagram, sequence diagram. Use case diagram of e-marketplace in Department of Agriculture Food Crops and Horticulture as a means 3 expand the market of processed food in Gunung Kidul can be seen in Figure 1.



Figure 1. Use Case Diagram

From Figure 1, we can see three actor which are administrator, seller and buyer. Every actor has a different

access rights. Administrator can do login, managing member, manage product, order, payment, shipment, topic in forum, and logout. Seller can do registration, login, managing product, order, topic in forum, shipment and logout. Buyer can do searching a product, managing shopping cart, ordering product, confirming payment, and shipping.

Activity diagram is modelling the workflow of business process and the sequence of the activity in the process. Activity diagram also helpful for describing parallel behavior, or describing the interaction of several use case. According to the use case diagram we will have 15 activity diagrams, due to the limited space we are not putting them in this paper.

Sequence diagram describe interaction between object in time sequence. It can be used to show the message that is passed between object. 15 sequence diagrams, due to the limited space we are not putting them in this paper.

The design of database uses entity relationship diagram (ERD). ERD of e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul can be seen in Figure 2.

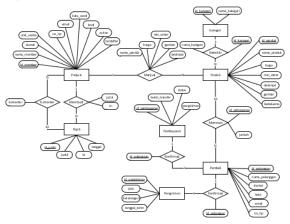


Figure 2. Entity Relationship Diagram (ERD)

IV. IMPLEMENTATION

In implementation we use PHP with framework CodeIgniter (CI), HTML, and for database we use MySQL. We will not show all the screenshot of the application, but only some of them which are:

A. Searching Page

ASPEMAKO Cei Poduk	Cast Paxen Registrani Login
Keranjang	Pencarian Asosiasi Pengolah Makanan Olahan
Keranjang Belanja Anda	Beranda / Pencarian
Rem produk : 0	<i>新国</i> 製
Pembayaran	S & 3
Konfirmasi Perribayaran	
Kode Pernesanan Cek	Nama Geweine Model Heges (p. 5.5.00) Unit Usaha Haylo Minimal Order 2
Pengiriman	Detail
Status Penginiman	
Kode Pernesanan Cek	2 v Pesin
	Halaman :

Figure 3. Searching Page

Figure 3, shows the screenshot of searching page. User can search the product they want to see and buy. User can input the searching key and the system will display the the result. Figure 4, shows the screenshot of manging the shopping cart. Users can manage their shopping cart like add item, delete item and clear the shopping cart.

ASPEMAKO Car Pro	luk -		Carl Forum	Registrasi Login	
Keranjang	Keranjang Belanja Aso	siasi Pengolah Ma	kanan Olahan		
Keranjang Belanja Anda	Beranda / Keranjang				
Item produk : 2	Keranjang Belanja Anda Aso	iasi Pengolah Makaman G	lahan		
Tetal : Rp. 70,000.00	Nerno Produk	Jumlah	Harpo	Total	
	Brownies Mocaf	2	Rp. 35,000.00	Rp. 70,000.00	×
Litat Selesai	Total Belanja			Rp. 70,000.00	
Pembayaran	Kosongkan Kesanjang	anjut Belanja 🛛 Bel	esai Belanja		
Konfirmasi Pembayaran					
ID Perresanan Cek					
Pengiriman					
Status Penginimas					
ID Pernesanan Cek					

ASPEMAKO	Carl Produk				Cali Forum Regist		
Keranjang		Pengiri	iman Asosiasi	Pengolah Makanan Ola	han		
Keranjang Belanja And	fa .	Berand	a / Pengiriman				
Item produk : 0		Pengerman Kenternasi					
		Status	Pengiriman Asosi	si Pengalah Makanan Olahan			
Pembayaran		No	Pemesan	Alamat	Bakti Transfer	Status	Pengiriman
Konfirmasi Pembayara	n	1	Agus Triyona	Jalan Gejah No.30		Menunggu	Menunggu
ID Perresanan	Cek				48		
Pengiriman							
Status Pengiriman			or Real Pengirime	n:			
ID Pernesanan	Cek	Jaca	Pengiriman :				
		Statu					
			gu - Berungga konfin Perdayaran lunas,	-			
		Lebh +	Fembeyaran lunas dan	berlebih, kelebihan akan dikembe San diharapkan untuk pembayan	ikan bersama pengirinan pesanan.		
			 Penbayaran kurang, iriman 	lan dharapkar untuk penbayan	n kekurangan.		

V. TESTING

We have done testing for e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul District with two methods. Alfa testing and Black Box Testing. Respondens to conduct Black Box Testing are Dinas Tanaman Pangan dan Holtikulura (TPH) Gunung Kidul. They are really understood about management of these system. From Black Box testing we have a result that the system is running well and no errors. Whereas Alfa Testing, involves 10 respondens from the different work backgrounds. From the Alfa testing we have a result that 95% of users agree that the system is user friendly, easy to used, nice performance, so the system is deserve to be implemented.

VI. CONCLUSION

We have several conclusion in developing e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul District i.e:

- We have developed developing e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul District as a means to expand the market of processed food in Gunung Kidul District
- The developing e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul District is deserve to be implemented.
- This e-marketplace in Department of Agriculture Food Crops and Horticulture in Gunung Kidul District can help in Department of Agriculture Food Crops and Horticulture in Gunung Kidul District to achieve their goals.

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Figure 4. Manage the shopping cart

ASPEMAKO Carl Produk	Carl Posure Registrasi Login
Keranjang	Pemesanan Asosiasi Pengolah Makanan Olahan
Keranjang Belanja Anda	Beranda / Pernesanan
Item produk : 2	Form Perfestantin Assessi Pergetah Halanan Olahan
Total : Rp. 70,000.00	Nama
Lihat Selesai	Marriat
Pembayaran	A Alanat Kota
Konfirmasi Pembayaran	In Kota
ID Pemesarian Celk	Enal Enal
Pengiriman	No.Hp
Status Pergiriman	
ID Pemesanan Cek	Pean Data

Figure 5. Order Page

The order page can be seen in Figure 5. User can fill the form where 3 product has to be shipped. The payment confirmation page can be seen in Figure 6. User can upload their transfer receipt.

Keranjang	Konfirm	Konfirmasi Asosiasi Pengolah Makanan Olahan						
Keranjang Belanja Anda	Berand	a / Konfemasi						
Item produk : 0	Konfernasi Perebayaran Asosian Pergolah Balanas Gahan							
	No	Persesan	Produk	Horga	Jumlah	Total		
Pembayaran	1	Agus Triyono	Brownies Mocaf	36,000	2	Rp. 70,000		
Konfirmasi Pembayaran	Total	Total Persbeyaran						
D Pemesanan Cek Pengiriman	No. Rata Alas Na	aran transfer melalui A751 M aning: 110005804256 me: Apus Triene	andri. Silahkan konfirmasi pembayaran dence					
Status Pengiriman		an nesetukan pendayaran,	alankan continala perbayaran benga	n menunjukan bukt stana	w.			
D Perresanan Cek	Be	s Transfer owse	e.					
	Konfi	ivnasi						

Figure 6. Payment Confirmation Page

The shipment status page can be seen in Figure 7. User can see the shipment status of their order in this page.

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