

DESIGN OF MANAGEMENT INFORMATION SYSTEM COST OF GOOD SOLD AND PROFIT ESTIMATE BASED ON THE RELEVANT COST AND BENEFITS METHOD IN JOINT PRODUCT ON UMKM CREATIVE INDUSTRIES IN THE CITY OF BANDUNG USING PHP AND MYSQL

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Abstract

Researcher conducted a survey on some UMKM Creative Industries in the city. Based on a survey who has done, most of the UMKM have a low school education and less understand in the calculation of cost of goods sold according to standards. This resulted in the UMKM do not want to take risks in accepting special orders because customers usually ask for a lower price when ordering special order. The UMKM often assume that they do not have a profit if it receives a special order, it turns out after calculated by the method of Relevant Cost and Benefits, there are a number of profit that they can be obtained. Therefore, the title of the report is "**Management Information System Design Cost of Sales and Acquisitions Earnings Estimates Relevant Method Based Cost And Benefits in the Joint Products at UMKM Creative Industry in Bandung by Using PHP and MYSQL**".

From 3000 UMKM owned by the city of Bandung, researchers took three UMKM as a sample by using cluster sampling method. The first sample, namely PT. Khomsah Kholifah, the second sample is Rama Pastry, and a sample of the latter is the wholesale doll. In this study, researchers took a sample of financial statements of PT.Khomsah Kholifah on February 2015. Design research is the design of primary and secondary research. This type of research is description research or survey. The type of data used is the data kualitatif. The type of research design used is descriptive-analytical research. The method used is descriptive method and survey method. Data collection techniques used is interview and observation. Model development system is a waterfall.

Researcher propose to design a management information system cost of sales and profit forecasts based on the relevant methods of cost and benefits in using web technology products along with the processing of data in accordance with accounting standards.

Keywords: Design, Management Information Systems, Cost of Good Sold, Relevant Cost and Benefits, Profit Estimate.

1. Introduction

a. Background of the Problem

Bandung is a creative city with the greatest creative potential of human resources, it is not surprising that many UMKM dispersed creative industries in the city. Based on a survey researcher who has done, most of the UMKM have a high school education and less understood maximum in the calculation of cost of goods sold according to the standard. This resulted in the UMKM do not want to take risks in receiving a special order because usually in a special order, costumer ask for a lower price. The UMKM often assume that they do not make a profit if it receives a special order, it turns out after calculated by the method of Relevant Cost and Benefits, there are a number of profit that can be obtained. There are six methods Relevant Cost and Benefits, but researchers only take two methods that become priorities was to accept or reject special orders and sell products with or without additional process because it is often a problem in the field.

Based on the above, the authors are keento take the title "Design Of Management Information System Cost Of Good Sold and Profit Estimate Based On The Relevan Cost and Benefits Method in Joint Product on UMKM Creative Industries in The City of Bandung Using PHP and MySQL".

b. Identify the Problem

1. What is the procedure calculation of cost of sales and profit estimates using relevant methods in product cost and benefits together in UMKM creative industries in the city?
2. How to design management information system calculation of cost of sales and profit estimates using relevant methods in product cost and benefits together in creative industries in the city of Bandung UMKM using web-based technologies.

c. Boundary Problem

1. Research conducted the study on UMKM in the creative industries relating to the calculation of cost of sales and profit forecasts in the products together to solve the problems faced by the UMKM in the creative industries in the city who runs a joint product (joint product). Relevant cost analysis that researchers use is "accept or reject special orders".
2. Design of management information system calculation of cost of sales and profit forecasts on UMKM in joint product of creative industries in the city using web-based technologies.

d. Research Purpose

1. To get the data calculation procedure of goods sold and profit estimates using relevant methods in product cost and benefits together in UMKM creative industries in the city are running.
2. To design a management information system calculating the cost of sales and profit estimates using relevant methods in product cost and benefits together in creative industries UMKM in the city by using web technology.

2. Theoretical Framework

a. Design

Design definition in a book called Sistem Informasi Manajemen is as follows: "*Perancangan adalah kemampuan untuk membuat beberapa alternatif pemecahan masalah*" (Susanto, 2013). Another definition of the design in the book Accounting Information Systems are as follows: "*Perancangan mencakup perancangan logis dan fisik. Kegiatan pokok perancangan logis adalah melengkapi eksternal level schema dan menterjemahkan persyaratan data para pemakai dan program aplikasi ke dalam conceptual level schema. Perancangan fisik (Physical Design) adalah mengubah hasil rancangan konsep ke dalam struktur penyimpanan fisik*" (Krismiaji, 2010).

Based on the above definition, the researchers were able to conclude that the design is an alternative to solve a problem logically and physically.

b. System

Definition of the system in a book entitled Sistem Informasi Akuntansi namely: "*sistem adalah rangkaian dari dua atau lebih komponen-komponen yang saling berhubungan, yang saling berinteraksi untuk mencapai satu tujuan*" (Romney 2011). Another definition of the system in a book called Sistem Informasi Manajemen is as follows: "*sistem adalah kumpulan/ group dari subsistem/*

bagian/komponen apapun baik fisik ataupun non fisik yang saling berhubungan satu sama lain dan bekerja sama secara harmonis untuk mencapai satu tujuan tertentu" (Susanto, 2013). Based on the above definition, the research were able to conclude that the system is a collection of subsystems that work together to achieve a goal.

c. Informasi

Definition of information in the book Sistem Informasi Akuntansi areas follows: "*informasi adalah data yang telah diorganisasi, dan telah memiliki kegunaan dan manfaat*" (Krismiaji, 2010). Another definition of information in a book entitled Analisis dan Desain Sistem Informasi that "*informasi adalah data yang diolah menjadi bentuk yang lebih berguna dan lebih berarti bagi yang menerimanya*" (Jogiyanto, 2005).

Based on the above definition, the research were able to conclude that the information is data that is processed and manipulated so that it becomes more useful to the recipient.

d. Information System

Definition of information systems in a book called Sistem Informasi Manajemen is as follows: "*Sistem informasi adalah kumpulan dari sub-sub sistem baik fisik maupun non fisik yang saling berhubungan satu sama lain dan bekerja sama secara harmonis untuk mencapai satu tujuan yaitu mengolah data menjadi informasi yang berguna*" (Susanto, 2009).

Another definition of a system of information in a book entitled Analisis dan Desain Sistem Informasi are as follows:

"*Sistem informasi adalah suatu sistem di dalam suatu organisasi yang mempertemukan kebutuhan pengolahan transaksi harian, mendukung operasi, bersifat manajerial dan kegiatan strategi dari suatu organisasi dengan laporan-laporan yang diperlukan*" (Jogiyanto, 2005).

Based on the above definitions, research can conclude that the information system is a collection of sub-systems which are interconnected with one another to achieve one goal.

e. Management

Management definition according R.Terry George and Leslie W.Rue in the book Principles Of Management diterjemakan by Ticoalunamely: "*manajemen adalah suatu proses atau kerangka kerja yang melibatkan bimbingan atau pengarahan suatu*

kelompok orang-orang ke arah tujuan-tujuan organisasional atau maksud-maksud yang nyata” (Ticoalu, 2010).

Another definition of management in the book Manajemen: dasar, pengertian, dan masalah is: “manajemen adalah ilmu dan seni mengatur proses pemanfaatan sumberdaya manusia dan sumber daya lainnya secara efektif dan efisien untuk mencapai suatu tujuan tertentu” (S.P Hasibuan, 2011). Based on the above definition, the research were able to conclude that management is the science or art that involves the direction of a group to utilize human resources and other resources to achieve certain goals.

f. Management Information Systems

Definition of management information systems in the Sistem Informasi Manajemen are:

“Sistem informasi manajemen adalah kumpulan dari sub-sub sistem yang saling berhubungan satu sama lain dan bekerja sama secara harmonis untuk mencapai satu tujuan yaitu mengolah data menjadi informasi yang diperlukan oleh manajemen dalam proses pengambilan keputusan saat melaksanakan fungsinya” (Susanto, 2013).

Another definition of management information systems in a book called Sistem Informasi Manajemen: Mengelola Perusahaan Digital namely: “Sistem informasi manajemen adalah sistem informasi pada level manajerial organisasi yang melayani fungsi perencanaan, pengendalian, dan pengambilan keputusan dengan cara menyediakan rangkuman rutin dan laporan perkembangan” (Laudon, 2005).

Based on the above definitions, it can be concluded that the management information system is a system that serves to generate useful information for operational activities of an organization.

g. Cost Of Good Sold

Definition of cost of goods sold in a book entitled Alat Analisa Dalam Pembelian is “harga pokok penjualan adalah hasil perkalian antara perputaran persediaan dengan rata-rata persediaan selama satu periode tertentu” (Alwi, 1997). The cost price consists of costs of raw materials, direct labor costs and factory overhead costs. Definition of raw material costs according to Akuntansi Suatu Pengantar namely: “the cost of raw materials (raw material) is the cost of goods that can be easily and immediately identified with finished goods” (Soemarso, 2004). Definition of direct labor costs (direct labor) based on the book An Introduction Accounting is: *biaya buruh langsung adalah biaya untuk buruh yang menangani secara langsung proses produksi atau yang dapat*

diidentifikasi langsung dengan barang jadi” (Soemarso, 2004). Definition of factory overhead cost Akuntansi Suatu Pengantar namely: *“biaya overhead pabrik adalah biaya-biaya pabrik selain bahan baku dan buruh langsung”* (Soemarso, 2004).

h. Profit Estimated

The definition of profit in a book entitled Akuntansi Suatu Pengantar of laba adalah *selisih pendapatan atas beban sehubungan dengan kegiatan usaha”* (Soemarso, 2004). Another definition of profit in a book entitled Akuntansi Perbankan that *“laba merupakan selisih lebih antara pendapatan di atas biaya dalam suatu periode, dan disebut rugi apabila terjadi sebaliknya”* (Taswan, 2005).

Based on the above definitions, the research were able to conclude that the profit forecast or estimate is an initial calculation of the difference of income or sales minus operating expenses of making a product.

i. Relevant Cost and Benefits

Relevant definition of relevant cost or expense according to Akuntansi Manajemen: dasar-dasar konsep biaya dan pengambilan keputusan that is *“biaya relevan adalah semua biaya yang akan terjadi dimasa mendatang kecuali unavoidable cost yaitu meliputi sunk cost dan biaya yang tidak berbeda”* (Ahmad, 2007).

Another definition of the relevant costs areas follows: *“biaya relevan merupakan biaya yang dikeluarkan pada masa yang akan datang (future time) yang berbeda untuk setiap pilihan yang tersedia bagi pengambil keputusan”* (Ambarriani, 2000). Based on the above definition, the authors conclude that the relevant costs (Relevant cost) are costs that will be incurred in the future.

j. Joint Product

Definition of joint products in a book entitled Akuntansi Biaya is: *“Dua Produk atau lebih yang dihasilkan secara simultan dari suatu proses atau melalui serangkaian proses tertentu, dimana masing-masing produk mempunyai nilai peneualan yang relatif besar atau berarti, maka produk-produk ini disebut dengan produk bersama”* (Dunia, 2012).

Joint product definition according to the book entitled Akuntansi Biaya Teori & Aplikasi of *“produk bersama (joint product) adalah beberapa produk yang dihasilkan dalam suatu rangkaian atau seri produk bersama atau serempak dengan menggunakan bahan, tenaga kerja dan biaya overhead secara bersama”* (Bustami, 2007). Based on the above definition, the researchers were able to conclude that the products together are some of the products produced through a

series of specific processes using materials, labor and over head costs together.

3. Research Method

a. Unit of Analysis

Understanding the unit of analysis in the book entitled *Prosedur Penelitian Suatu Pendekatan Praktik* namely “*unit analisis dalam penelitian adalah satuan tertentu yang diperhitungkan sebagai subjek penelitian*” (Arikunto, 2010). Another definition of the unit of analysis in the book *Metodologi Penelitian* “*unit analisis adalah tempat dimana peneliti melakukan penelitian*” (Supriyati, 2011). Based on the above definition, the researchers can conclude that the unit of analysis is a place or subject in the form of individual, group or organization in the study were obtained from the research. The unit of analysis is studied by the author is the owner UMKM creative industries in the city of Bandung.

b. Population and Sample

According to the book titled *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, the definition of the population is “*populasi adalah wilayah generalisasi yang terdiri atas: obyek/subyek yang mempunyai kualitas dan karakteristik tertentu yang ditetapkan oleh peneliti untuk dipelajari dan kemudian ditarik kesimpulannya*” (Sugiyono, 2011). Other definitions in the book *Metodologi Penelitian Methodology* namely “*populasi adalah himpunan keseluruhan karakteristik dari objek yang diteliti*” (Supriyati, 2011). Based on the above definition, it can be concluded that the entire population is qualified to be studied. Population studied by the authors in this study is the creative industrial UMKM in the city of Bandung, a number of 3000 units UMKM. Researchers took 3 areas of different UMKM to be sampled. In the field of fashion, the researchers took samples of PT. Khomsah Kholifah. In the culinary field, the researchers took samples of Rama Pastry, whereas in the field of handicraft, researchers took samples of wholesale doll.

Definition of the sample in the book *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* is as follows: “*sampel adalah bagian dari jumlah dan karakteristik yang dimiliki oleh populasi tersebut*” (Sugiyono, 2011). Another definition of a sample in a book entitled *Metodologi Penelitian* is “*sampel adalah kelompok kecil yang diamati dan merupakan bagian dari populasi sehingga sifat dan karakteristik populasi juga dimiliki oleh sampel*” (Supriyati, 2011). Based on the above understanding, researchers can conclude that the sample is taken a small part of the population. Samples to-1 is the creative industrial UMKM engaged in culinary namely Rama Pastry.

Rama pastry producing pastry and fried bread with a variety of flavors. Pastry Rama is located on Jl. Rajawali. Sample 2 is the creative industrial UMKM engaged in handicraft, namely Wholesale Dolls. As the name implies, this doll wholesale produce various kinds of dolls and accessories for the fridge, tv, tissue and others. Wholesale pack Doll Asep is located at Jl. Vegetables. Samples 3rd is the creative industrial UMKM engaged in fashion, namely PT. Khomsah Kholifah. UMKM that produce creative industries and fashion Muslim hijab is located at Jl. Cisaranteun Kulon 8, 40 293 Arcamanik, Bandung

c. Object of Research

Definition of the research object in book *Metodologi Penelitian* is “*objek penelitian adalah variabel yang diteliti oleh peneliti ditempat penelitian dilakukan*” (Supriyati, 2011). Another definition according to the book *Prosedur Penelitian Suatu Pendekatan Praktik* is as follows: “*objek penelitian evaluatif adalah sebuah sistem*” (Arikunto, 2010). Based on these definitions, the object of the research conducted by researchers are describing the management information system of the cost of sales and profit estimates by using a web-based PHP and Mysql in the case of special orders.

d. Research Design

Definition of the research design according to the book *Metodologi Penelitian* namely “*desain penelitian adalah sebuah rencana untuk memilih sumber-sumber dan jenis informasi yang dipakai untuk menjawab pertanyaan penelitian*” (Supriyati, 2011). Another definition in a book entitled *Metodologi Penelitian* namely “*desain dari penelitian adalah semua proses yang diperlukan dalam perencanaan dan pelaksanaan penelitian*” (Nazir, 2005).

Based on the above definition, the research concluded that the study design is a planning process to select the source and type of information in the conduct of research. In this study, research used a survey design. Based on the book titled *Metodologi Penelitian* (Supriyati, 2011) were reader searcher, survey design aims to collect information from a number of people. The survey design can be done for research explorative, descriptive and experimental.

e. Research Method

According to the book titled *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, the definition of research methods, namely: “*metode penelitian pada dasarnya merupakan cara ilmiah untuk mendapatkan data dengan tujuan dan kegunaan tertentu*” (Sugiyono, 2011). Another definition of research

methods in the book Metodologi Penelitian namely *“metode penelitian adalah tatacara bagaimana suatu penelitian dilaksanakan”* (Supriyati, 2011). Based on the above definition, the researchers concluded that the research methods are the steps to obtain the various data. Based on the above definition, the research method is a method that researchers use surveys because researchers obtained data required by means of a survey. Definition of survey methods in the book Metode Penelitian Dalam Perspektif Ilmu Komunikasi dan Sastra is as follows: *“survei adalah metode deskriptif dengan mengumpulkan data yang relatif terbatas dari kasus-kasus yang relatif besar jumlahnya”* (Hikmat, 2011). Another definition of survey methods in the book Metodologi Penelitian namely *“metode Survey adalah suatu metode penelitian yang mengambil sampel dari suatu populasi dan menggunakan kuisioner sebagai alat pengumpulan data”* (Supriyati, 2011).

f. System Development Methodology

Definition of system development by (Jogiyanto, 2005) *“pengembangan sistem adalah menyusun suatu sistem yang baru untuk menggantikan sistem yang lama secara keseluruhan atau memperbaiki sistem yang telah ada”*. Researchers used waterfall model of system development for the design of management system in formasi carried out in accordance with the stages in order to avoider petition of the previous stage. The definition no model system development (waterfall) in a book entitled Analisa Sistem Informasi is as follow: *“waterfall adalah struktur pengembangan sistem dimana setiap tahap harus diselesaikan terlebih dahulu secara penuh sebelum diteruskan ke tahap berikutnya untuk meghindari terjadinya pengulangan tahapan”* (Sutabri, 2004). Based on the definitions above the research concluded that the waterfall model of system development is to develop anew system replaces the old system in accordance with the stages and procedures to avoid a repetition of the previous stages.

g. Research Sites

Research conducted the study on some UMKM creative industries in the city. Samples to which Ramapastry - 1 is locatedat Jl. Rajawali. Sample-2 isa whole sale doll is located on Jl. Vegetables. 3rd sample is PT. Khomsah Kholifah located on Jl. Cisaranteun Kulon8, 40 293 Arcamanik, Bandung. Researchers conducted the study in terms of the calculation of cost of sales and profit for ecasts based on the relevant method sof cost and benefits to the product together (joint product).

4. Development Company

a. Organizational Structures

Ilustration of Organizational Structures PT. Khomsah Kholifah is shown in **Figure 1**

PT. Khomsah Kholifah

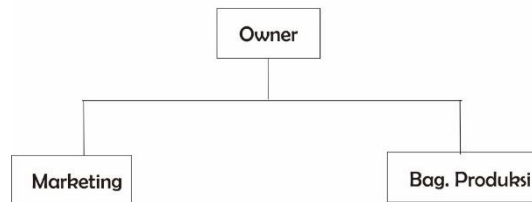


Figure 1 Organizational Structures PT. Khomsah Kholifah

b. Sales Invoice

Ilustration of Organizational Structures PT. Sales Invoice is shown in **Figure 2**

Tuan		Toko	
Nota No.			
Banyaknya	Nama Barang	Harga	Jumlah
Yang terima,	JUMLAH Rp.		

Figure 2 Sales Invoice

c. The Proposed Workflow

Ilustration of The Proposed Workflow is shown in **Figure 3**.

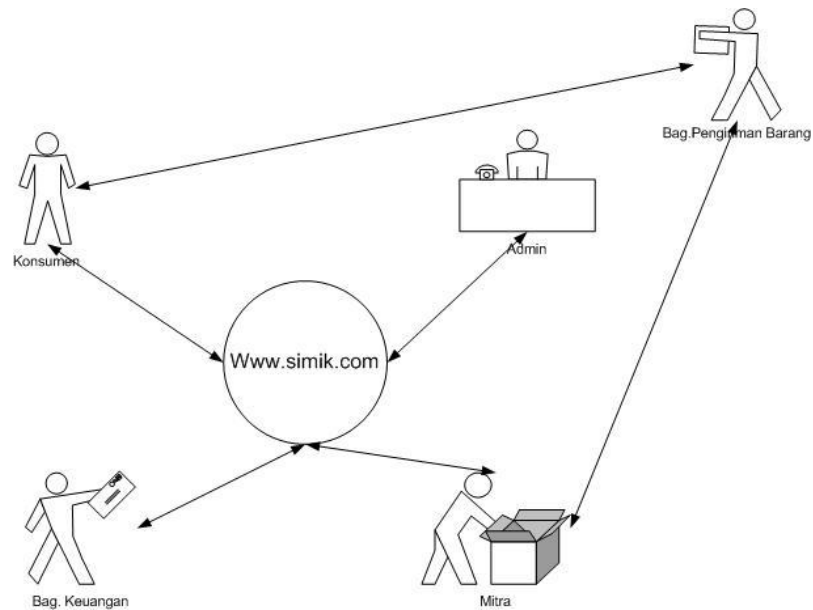


Figure 3 The Proposed Workflow

d. The Proposed BPMN

Illustration of The Proposed BPMN is shown in **Figure 4**

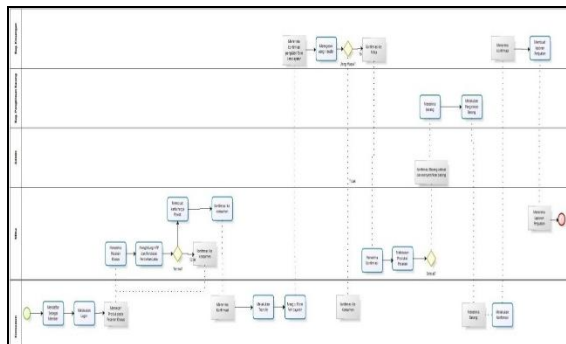


Figure 4 The Proposed BPMN

e. The Proposed Use Case

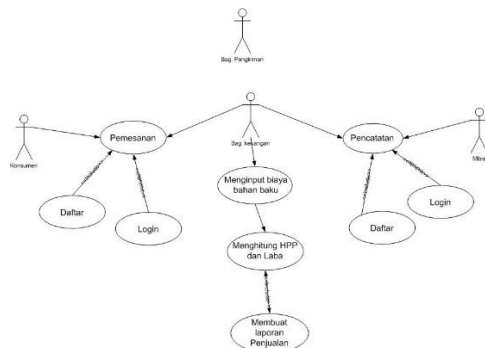


Figure 5 The Proposed Use Case

f. Normalization

Table 1 Normalization of the Sales Invoice Form Unnormal

Tanggal	Tuan/ Toko	Nota No	Banyaknya	Nama Barang	Harga	Jumlah
01/07/2015	Andien	1	20	Kerudung Anak	30.000	600.000
			5	Baju Koko	65.000	325.000

Table 2 Normalization of the Sales Invoice to the One Normal Form

Tanggal	Tuan/ Toko	Nota No	Banyaknya	Nama Barang	Harga	Jumlah
01/07/2015	Andien	1	20	Kerudung Anak	30.000	600.000
01/07/2015	Andien	1	5	Baju Koko	65.000	325.000

Table 3 Normalization of the Sales Invoice to the Two Normal Form

Relasi Transaksi						
Tanggal	Nota No	Banyaknya	Nama Barang	Harga	Jumlah	
01/07/2015	1	20	Kerudung Anak	30.000	600.000	
01/07/2015	1	5	Baju Koko	65.000	325.000	
Relasi Barang						
Nama Barang	Harga	Jumlah				
Kerudung Anak	30.000	600.000				
Baju Koko	65.000	325.000				

g. ERD (Entity Relationship Diagram)

Illustration of The Proposed Entity Relationship Diagram **figure 6**.

h. Design of Menu Structure

Illustration of Overall Program Menu Structure is shown in **Figure 7**.

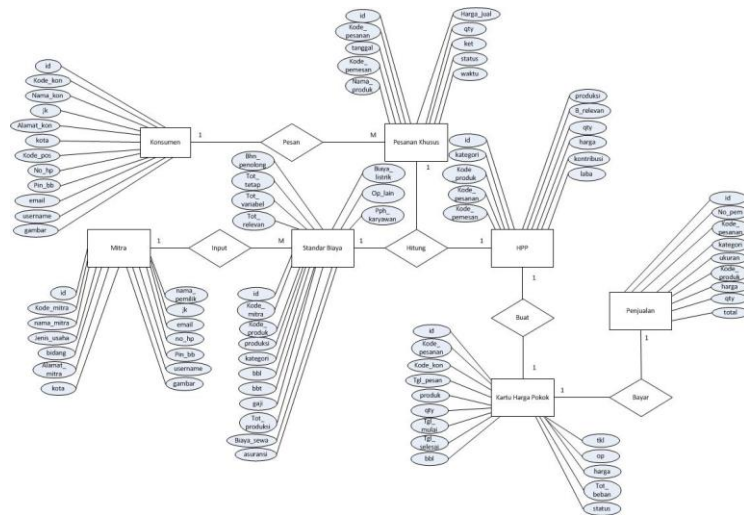


Figure 6 The Proposed Entity Relationship Diagram

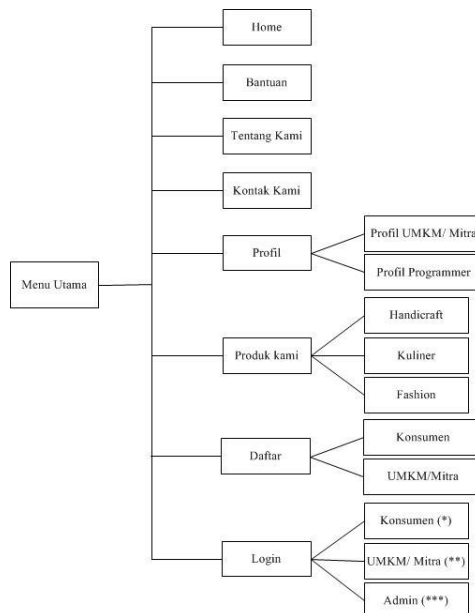


Figure 7 Overall Program Menu Structure

I. Display Program

Illustration of Aplication is shown in **Figure 8** and **Figure 9**.

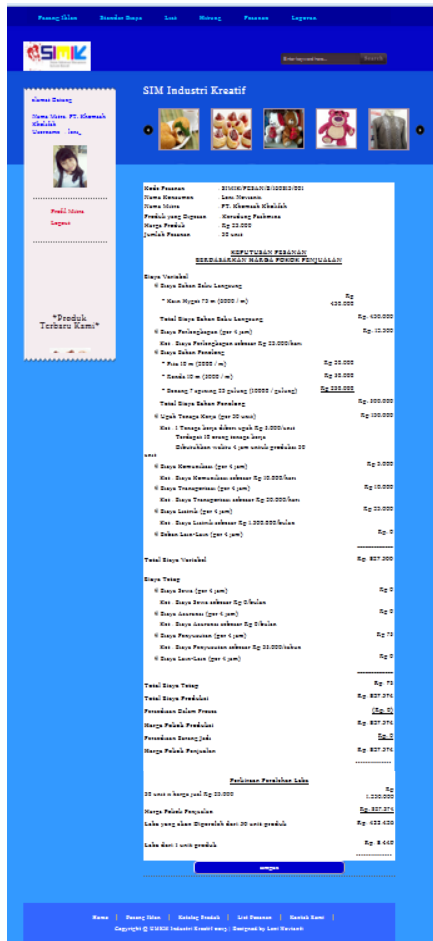


Figure 8. Display Report Cost of Good Sold



Figure 9. Display Report Cost of Good Sold Card

5. Conclusions and Suggestion

a. Conclusions

Researcher try to provide solutions to design a web – based information management system that uses PHP programming language and MySQL as its database, in order to help the UMKM Creative Industries in calculating COG and profit for each computerized and managed controlling for sales in the acceptance of orders in particular by making cards cost price. In addition, web – based information management system that researchers design can be used as promotion of the products it produces.

b. Suggestion

Research suggested for further research to develop four methods Relevant Cost and Benefits of researchers who are not discussed in this study are "make, hire or buy equipment or product components", "maintain or discontinue product lines or services", "evaluate programs or projects", and "define the services offered in non-profit organizations".

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