Development of Small and Medium Enterprises (SMEs) Accounting Information System in Cluster of Kampung Laweyan Batik, Surakarta, Indonesia

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The role of small and medium enterprises (SMEs) in the economy of a country was quite strategic, however the tightness of the competition, has allowed the SMEs into disadvantageous position. The SMEs need a precise accounting information system, thus the SMEs could improve the accuracy, validation data, productivity, and the competitiveness of enterprises. The problem of this research is how the SMEs accounting information systems in a cluster of Kampung Batik Laweyan Surakarta. To develop accounting information systems in a SMEs cluster of Kampung Batik Laweyan Surakarta, this research used research and development (R&D) method. Data obtained through analysis of the company's business processes. Results of data analysis used to develop accounting information systems in a SMEs cluster of Kampung Batik Laweyan Surakarta. Accounting information system development consists of the structure of SMEs organizations, the general design of accounting information systems of the SMEs, flowchart and documentation of the SMEs accounting information systems, and accounting software of the SMEs

Keywords: SMEs, accounting information system, Batik

Introduction

Research Background

Research background in recent years, attention and initiatives aimed to the development of small and medium enterprise (SMEs). The role of SMEs in the economy of a country was quite strategic, however the tightness of the competition, has allowed the SMEs into disadvantageous position. But the majority of SMEs does business on traditional ways, so the opportunities that did not be utilized by SMEs. To improve the competitiveness, they must increase the speed and accuracy of decision making. It would realize with the availability of accurate and valid data. Accounting information system could be a solution for SMEs in their efforts to provide accurate and valid data. Previous studies showing that the usage of accounting information

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systems by SMEs is still low (Amalia, 2012), one of the factors is accounting information system did not apply by (Widyastuti, 2012). SMEs need a proper accounting information system, which would apply by the SMEs (Wijayanti, 2010). SMEs in the batik industry in a cluster of Kampung Batik Surakarta Laweyan have the opportunity to develop their businesses, but many things are still facing a problem for SMEs in cluster of Kampung Batik Laweyan Surakarta. They need something to improve productivity, which it can improve their competitiveness trough improve the accuracy, validation of data, and the speed of decision making. Accounting information system is able to capture the problems in SMEs in cluster of kampung Laweyan Batik Surakarta (Wijayanti, 2010). Previous results mentioning that the level of accounting information system used by the SMEs in cluster Kampung Batik Laweyan Surakarta is only about 15%. The previous research also found that the SMEs in cluster of Kampung Batik Laweyan Surakarta want to develop the accounting information system to improve their productivity (Wijayanti, 2010). This fact makes the researcher motivated to develop SMEs accounting information systems. SMEs accounting information systems were developed based on the characteristics of SMEs in cluster Kampung Batik Laweyan Surakarta.

Research Problem

The problem of this research is how the SMEs accounting information systems in a cluster of Kampung Batik Laweyan Surakarta. Based on current conditions, this research is attempting to answer the research problem.

Objective Research

The main of objective research is to develop SMEs accounting information systems in a cluster of Kampung Batik Laweyan Surakarta, while the specific objective of this research as follows:

• To examine the characteristics of SMEs in cluster of Kampung Batik Laweyan Surakarta and to develop the models of the SMEs accounting information system;

• To develop models of SMEs accounting information systems in a cluster of Kampung Batik Laweyan Surakarta.

Literature Review

Accounting Information Systems

Accounting information systems is a combination of one branch of accounting and information technology systems. Accounting information system is a combination of three words, systems, accounting, and information, which would interpret as a collection of some of the components or sub-systems that work together to achieve the goal (Wijayanti, 2011). Accounting information systems in performing activities that require specific elements that vary depending on the level of automation of the accounting information system (Wilkinson, 2000), a common model elements include the accounting information system end users, data sources, data collection, data processing, database management, information producers, and feedback (Hall, 2001).

SMEs

SME is defined as a type of business that has a maximum capital Rp 200,000,000, excluding land and buildings. In addition to maximum capital, according to the Indonesian law, UU No. 9, 1985, SMEs also has some characteristics that:

• have an annual sales turnover of Rp 1,000,000,000;

• owned Indonesian citizen;

- independent, not subsidiaries or branches of companies that are not owned, controlled by, or affiliated directly or indirectly with medium or large business enterprise;

- form of business individuals, business entities are not incorporated, or incorporated business entity, including cooperatives.

Model of Development System

The development system is a set of activities, methods, results, and automated tools used to build and modify system information. Information system development is the science and art to do the design (designing) and the creation of information systems economically and elegantly (Beynon & Williams, 2003). Development of the system would use to build a system that is completely new or improve existing system. Some of the systems development methodologies used in popular area are:

(1) Traditional, consists of two methods:

- Linear (waterfall model), this model is often called the classic life cycle. This method provides a systematic overview of the approach and sequential systems;

- Iterative incremental (prototyping), this method is one of the systems development directed to satisfaction of end users. This method directed to interaction between users and developers. Users usually only expressed a desire for the system in general, software development which will define the needs and desires of the users into a system design which later developed into the system.

(2) Non-traditional:

- Rapid Application Development (RAD), this model would call agile programming or extreme programming;

- RAD is a software development process that emphasizes the linear sequential cycle progression in a short time (60 to 90 days) with a component-based construction approach;

- End-user SDLC, method development done directly by the end-user. This method is becoming increasingly feasible with the availability of programming languages that are easier to use. The direct involvement of end-users is very beneficial, because really understand how the system works, it means the system analysis phase can be done more quickly;

- Framework for the Application of Systems Thinking (FAST), this method helps the development of systems that provides a mechanism for understanding and analyzing user requirements, conduct negotiations, the selection of a feasible solution, making the system more organized, until the implementation of the system.

User Acceptance

Level of user acceptance has been long known as one of the important point to determine whether a system can be categorized as a successful system or not. The researchers found several variables to explain acceptance of information technology (information technology acceptance). The two variables most acceptable is the TAM which consists of two variables user satisfaction (user satisfaction) and the use of the system (system usage) as well as variable end user computing satisfaction (EUCS) which consists of a variable convenience (ease of use) and benefits (usefulness) and contents, accuracy, format, ease, and timeliness.

Research Method

Research Design

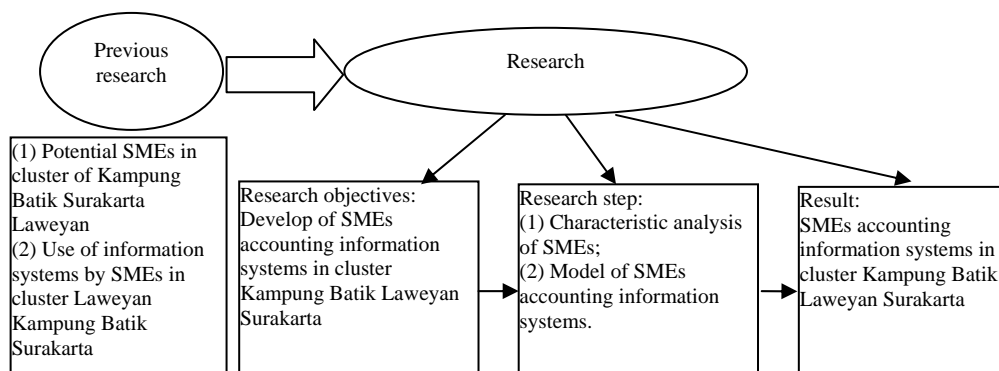The research design is as follows (see Figure 1):

Figure 1. Research design.

Object and Subject Research

The object research is the SMEs accounting information systems. The subject research is SMEs in cluster of Kampung Batik Laweyan Surakarta.

Data and Samples

Data and samples in this study are used primary data. For the primary data, this research will collect data using by the questioner, participatory observations, and in-depth interview. The samples in this research are SMEs being the research pilot project. Pilot project in this research was 10 existing SMEs in cluster of Kampung Batik Laweyan Surakarta. Researcher's use these pilot project in the research were 10 existing SMEs in cluster Kampung Batik Laweyan Surakarta. Researcher usage these SMEs to be the pilot project because a previous study had been used at the site and SMEs which will be used as a pilot project already has a computer.

Method for Data Analysis

Method for data analysis research and development (R&D) methods is used to develop the SMEs accounting information system. Data collected, and analyze to allow the characteristics of SMEs in cluster of Kampung Batik Laweyan. To develop the model of the SMEs accounting information system, this research emphasizes the involvement of the target as the subject of active research, making their experience as an integral part in the research, find the problem and solutions in the context of the empowerment of the target goal. Element of participation and involvement of the target group would be the most important in this study. The target group, researchers and practitioners would constantly together develop the SMEs accounting information systems. The model would be implemented in SMEs using accounting information software, which also compiled in this research

Result and Discussion

Characteristics of SMEs in Cluster Kampung Batik Laweyan Surakarta

(1) Business process SMEs in cluster Kampung Batik Laweyan Surakarta, in accounting cycle called revenue cycle, expenditure cycle, production cycles, cycles of fixed assets, and payroll cycles.

(2) Results of in-depth interviews conducted research also illustrates that the owners or managers of SMEs in cluster Kampung Batik Laweyan Surakarta generally run a company based on instinct and the habit. All decisions are in the hands of the owners, so management does not stand alone. SMEs in the cluster Kampung Batik Laweyan Surakarta, did not have a clear organizational structure and do not have a clear separation of

duties over the functions within the company, both functional, and operational administration.

(3) The characteristics of SMEs to the accounting information system, measurement of the correlation between the variables of TAM, end user computing satisfaction (EUCS), and user acceptance. Variables in the TAM is usefulness, ease of use, while the variables in the EUCS is content, accuracy, form, ease, and timeliness. From the questioner has been sent to the SMEs, 45 questioners usable, according to completeness of the analysis. Correlation test is a test used to measure the relationship between two variables in a linear fashion to determine the direction of the relationship. If the correlation coefficient is more than 0.5, then the relationship is strong, whereas if it is less than 0.5, then the relationship is weak. The correlation between variables showed the following results (see Table 1).

Table 1

Correlation Test Results

Variables	Coefficient	Signification	Correlation
Usefulness	0.520	0.5	Strong
Ease of use	1.000	0.5	Strong
Content	0.408	0.5	Weak
Accuracy	0.351	0.5	Weak
Format	0.319	0.5	Weak
Ease	0.253	0.5	Weak
Timeliness	0.533	0.5	Strong

The results of the correlation test, demonstrate that the variable usefulness, ease of use and timeliness has a strong association with user acceptance. The contents, accuracy, form; convenience (ease) has a weak relationship with the user acceptance. The results of in-depth interviews, that variable ease of use to be the most variable of the relationship with the user acceptance. To develop the SMEs accounting information system in the cluster Kampung Batik Laweyan Surakarta, shall provide convenience for SMEs, to perform data input, data processing, and searching for data.

The development of SMEs accounting information systems should be able to increase the productivity of SMEs. The system developed to be real time.

Other variables that have weak correlation such content, accuracy, form, simplicity (ease), still must be considered in developing of the SMEs accounting information system in cluster Laweyan Kampung Batik Surakarta, so that the system strictly in accordance with the needs and desires of SMEs, so that they can use and take advantage of the system to be developed.

Model of SMEs Accounting Information Systems

The model of SMEs accounting information systems can be seen in the following:

(1) Organizational Structure of SMEs.

The organizational structure is in need of SMEs that can definitely work best knowledge of each party involved in the management of SMEs. The organizational structure of SMEs had not formally established.

Prepare the SME information systems require separation of duties between departments in the management of SMEs so before preparing accounting information systems, it is a necessary organizational structure of SMEs. Based on the above the company's organizational structure described in general in Figure 2.
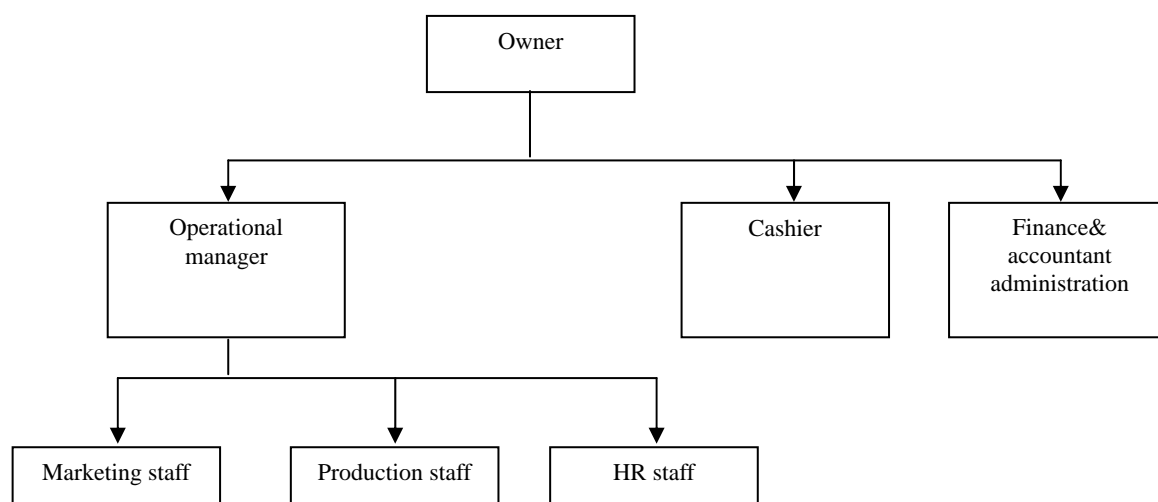
Figure 2. Organizational structures of SMEs in cluster of Kampung Batik Surakarta Laweyan.

(2) General design of SMEs accounting information systems.

SMEs accounting information developed by four sub-systems they are purchasing subsystem, cash subsystem, sales subsystem, and general ledger support systems (see Figure 3).
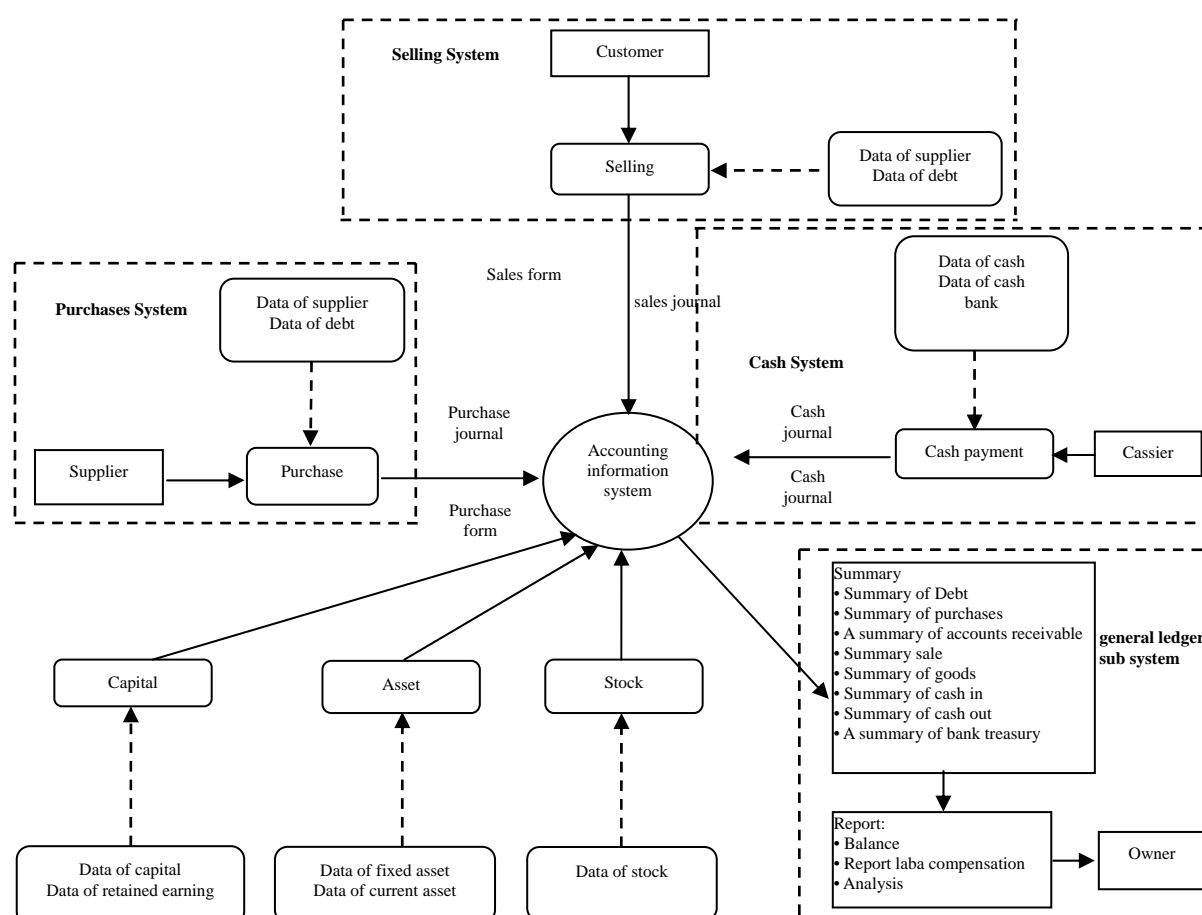

Figure 3. Design of SMEs accounting information systems in cluster of Kampung Batik Surakarta Laweyan.

(3) Flowchart of SMEs accounting information systems.

The flowchart of sales system, cash system, purchasing system, and ledger system you can see in Figures 4, 5, 6, and 7.
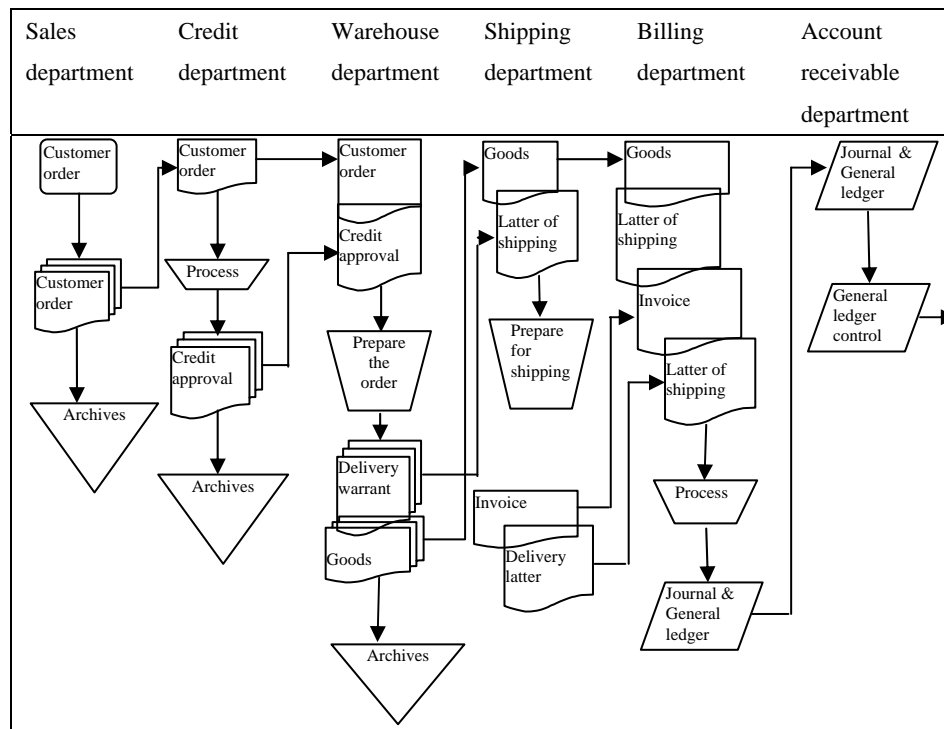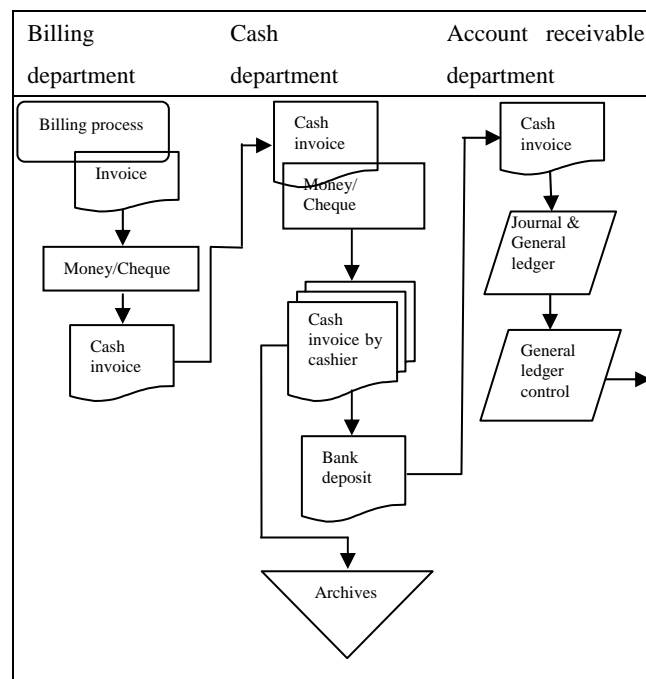

Figure 4. Flowchart of sales system.

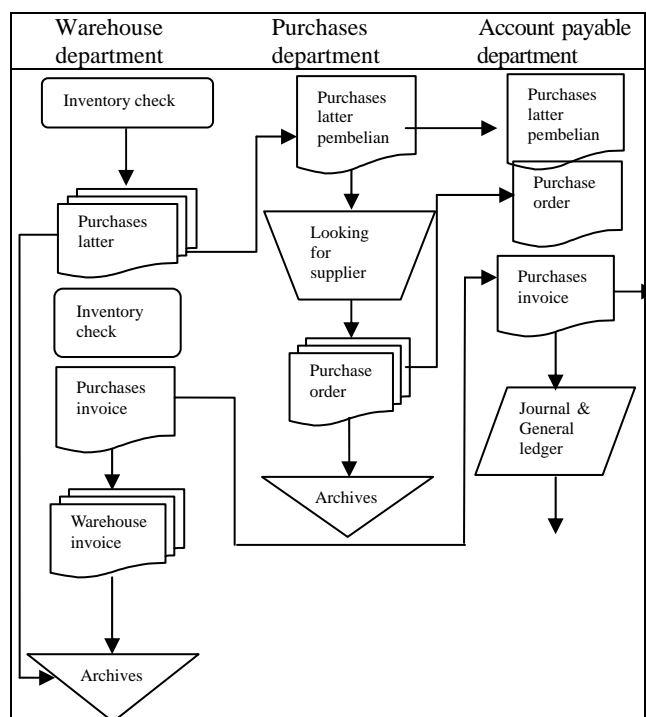*Figure 5.* Flowchart of cash system.
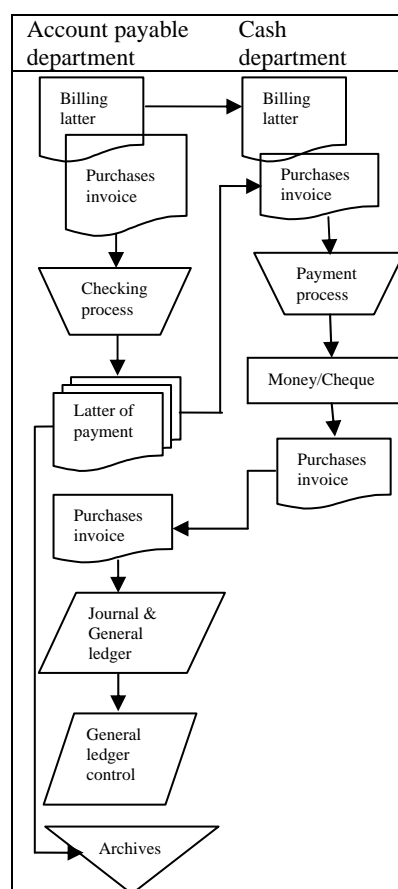
Figure 6. Flowchart of purchasing systems.

Figure 7. Flowchart of payment system.

(4) SMEs accounting information system database (see Figure 8).

tb_Journal
- ✓ journal_number
- ✓ journal_code
- account_number
- debet
- credit

tb_journal
- ✓ journal_numb
- ✓ journal_code
- no. account
- debet
- credit

tb_balance akun
- ✓ account_ code
- beginning balance end balance
- ✓ mount
- ✓ year
- ✓ flag

tb_account_reft
- ✓ account _code
- account _name
- balance_account
- flag

tb_property
- ✓ No
- account_code
- account_num
- purchases_date
- beginning_balance
- used
- acc_per_30day
- date_now
- acc_dep
- end_balance
- information
- day

tb_cost
- ✓ payment_ number
- payment_type
- payment_number
- ✓ cd_account
- no_account
- payment_ date
- payment _count
- information

tb_journal
- ✓ journal_number
- ✓ journal_code
- account_number
- debet
- credit

tb_hdpurchases
- ✓ no_invoice_purchases
- year;_purchases
- supplier_code
- supplier_name
- purchases_payment
- maturiy
- total_purchases
- discount_purchases
- deposit
- total_payable
- rest_ap
- status
- type-purchases

tb_journal
- ✓ journal_number
- ✓ journal_code
- account_number

tb_supplier
- ✓ supplier _code
- supplier _number
- contac_person
- addres_supplier
- city
- phone_1
- phone_2

Tb_HdAPComp
- ✓ no_invoice
- ✓ payment
- kd_-supplier
- payment_date
- payment_total

tb_sales
- ✓ transaction_number
- ✓ goods _code
- goods_name
- sale_price
- goods _number
- sub_balance

tb_hdpurchases
- ✓ no_transaction
- transaktion_date
- kd_costmr
- nm_costmr
- type-paymet
- maturity
- total_payment
- discount
- deposit
- total_ar
- rest_ar
- status

Tb_Costmr
- ✓ kode_costmr
- costmr _ number
- costmr _ account
- city
- phone_1
- phone_2

tb_goods
- ✓ goods. code
- nm_goods
- unit
- cost of good sold
- stock
- min - stock
- max stock_
- sale-price
- gp

tb_diarcostmr
- ✓ no_invoive payment
- ✓ no_transaction
- total_payment
- rest_payment
- rest_ar
- status

tb_hdarcostmr
- ✓ no_payment
- invoice
- cuctomer_code
- customer_number
- payment_date
- payment_total

tb_balance sheet
- cash
- cash_bank
- account receivable
- inventory
- supplies
- building
- acc dep_building
- land
- furniture
- acc dep_furniture
- car
- acc dep_car
- total asset
- account_payable
- bank_payable
- other_payable
- total liabilities
- capital
- total liabilities & owner equity
- mount
- year
- delete

tb_balance
- account.code
- account_name
- debet
- credit
- mount
- year
- count
- date
- bgpart
- delate

Tb_income statement
- year
- selling_bruto
- PPN
- begining _stock
- purchases_stock
- cost_of good sold
- end_stock
- cost_of good sold
- income_bruto
- expanse_salary
- expense_transportation
- expense-phone
- expense_other
- nett_income

tb_user
- ✓ user_name
- password
- status

tb_equaty
- equity_beggining
- prive
- income
- equity_end
- date
- mount
- year

tb_ledger
- date_journal
- information
- reff
- debit
- credit
- balance
- date
- mount
- year

tb_profile
- name
- addres
- phone
- manager

tb_counter
- counter

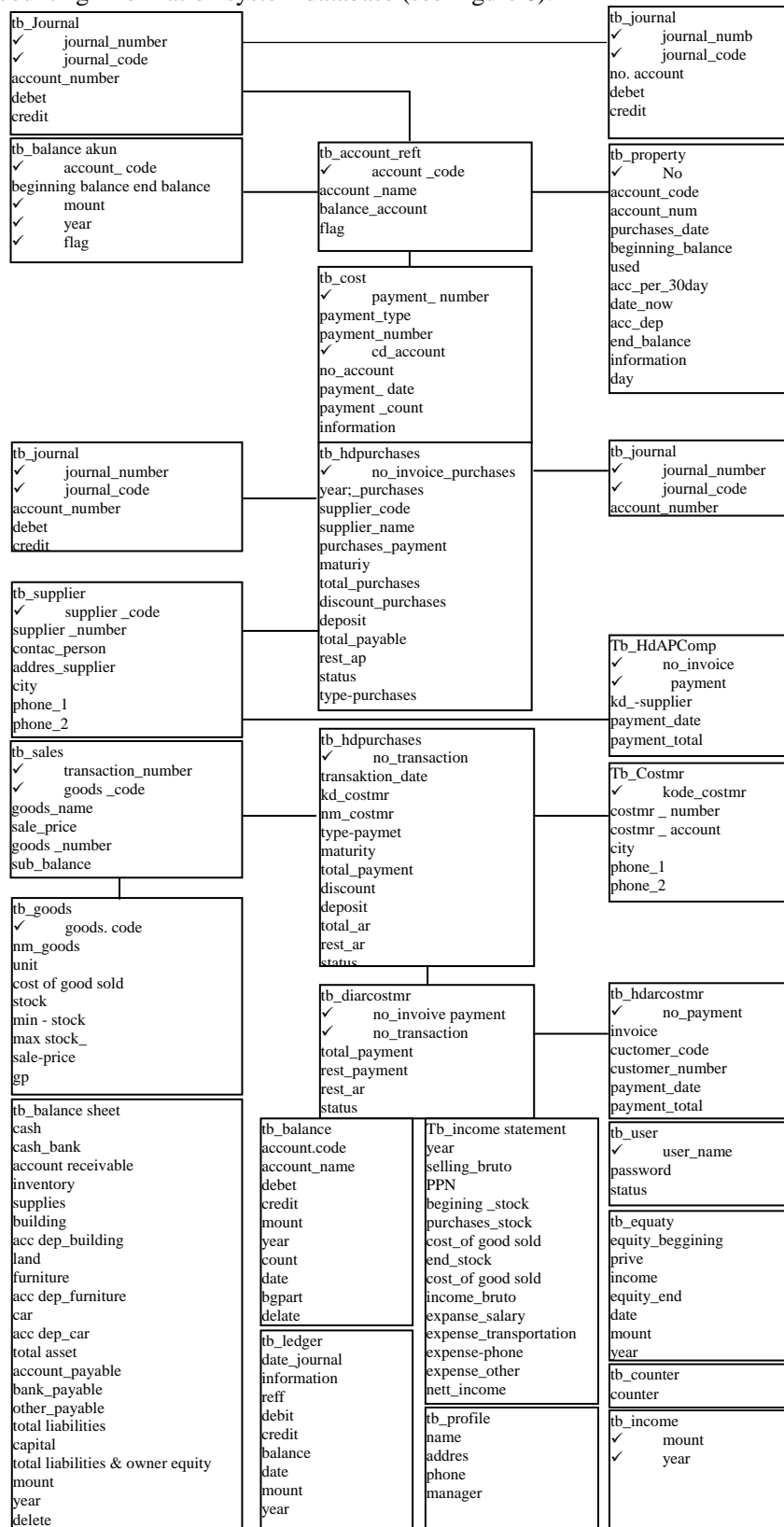**tb_income**
- ✓ mount
- ✓ year

Figure 8. SMEs accounting information system database.

(5) SMEs accounting information systems software.

Based on the results of the form design, this research developed SMEs accounting information systems software. The display SMEs accounting information systems software are as follows in Figures 9, 10, 11, 12, 13, 14, 15, 16, and 17.

Figure 9. Account of financial statement.

Figure 10. Supplier data input.

Figure 11. Input of inventory data.

Figure 12. Input of purchasing transaction.

Figure 13. Input of selling transaction.

TANGGAL NOTA :07/11/2012

Rekening Pertama :   1-1100- KAS TUNAI ▾

pengaruh rekening 1 :   BERTAMBAH ▾

Rekening Kedua :   1-1100- KAS TUNAI ▾

pengaruh rekening 2 :   BERTAMBAH ▾

JUMLAH:

KETERANGAN:

Send

Figgure 14. Journal.

BATIK KENCANA MURNI

LAPORAN BUKU BESAR

Dari No. Perkiraan 1101001 s/d 7105

Periode: 01/01/2012 s/d 31/01/2012

Tgl	No. Bukti	Uraian	CC	Perk. Pembantu	Debet	Kredit	Saldo
No. Perkiraan : 1101001 - Kas Kecil							
Saldo Awal							3.300.000,00
							3.300.000,00
No. Perkiraan : 1101002 - Kas Besar							
Saldo Awal							3.000.000,00
							3.000.000,00
No. Perkiraan : 1102001 - Bank BCA Rp 001-3020121							
Saldo Awal							23.544.502,72
15/01/12	BBM/00001/01	Pelunasan Invoice INV/002/01/07			9.400.000,00	0,00	32.944.502,72
25/01/12	BBK/00001/01	Biaya gaji			0,00	5.000.000,00	27.944.502,72
31/01/12	BBM/00003/01	Bunga jasa giro			15.000,00	0,00	27.959.502,72
		Total No. Perkiraan 1102001 :			9.415.000,00	5.000.000,00	27.959.502,72

Figure 15. General ledger.

Close   **BATIK KENCANA MURNI**

Laba/Rugi

31 Januari 2012

Keterangan	s/d Januari 2011	s/d Januari 2012	Naik/Turun	%
PENDAPATAN				
Pendapatan Operasi	45.500.000,00	(0,00)	(45.500.000,00)	(1,00)
Potongan Penjualan	(2.000.000,00)	(0,00)	2.000.000,00	(1,00)
TOTAL PENDAPATAN	**43.500.000,00**	**(0,00)**	**(43.500.000,00)**	**(1,00)**
HPP/BEBAN USAHA LANGSUNG				
Persediaan Awal	(25.000.000,00)	(0,00)	25.000.000,00	(1,00)
Pembelian	(11.000.000,00)	(0,00)	11.000.000,00	(1,00)
Persediaan Yang Tersedia Untuk Dijual	(36.000.000,00)	(0,00)	36.000.000,00	(1,00)
Persediaan Akhir	22.000.000,00	(0,00)	(22.000.000,00)	(1,00)
Harga Pokok Penjualan	(14.000.000,00)	(0,00)	14.000.000,00	(1,00)
Beban Usaha Langsung	(5.000.000,00)	(0,00)	5.000.000,00	(1,00)
TOTAL HPP/BEBAN USAHA LANGSUNG	**(19.000.000,00)**	**(0,00)**	**19.000.000,00**	**(1,00)**
LABA KOTOR	**24.500.000,00**	**(0,00)**	**(24.500.000,00)**	**(1,00)**

Figure 16. Income statement.

BATIK KENCANA MURNI

NERACA SALDO

31 Januari 2012

Hal 1 Dari 1

No. Perk.	Keterangan	Saldo Awal	Debet	Kredit	Saldo Akhir
1101001	Kas Kecil	3.300.000,00	0,00	0,00	3.300.000,00
1101002	Kas Besar	3.000.000,00	0,00	0,00	3.000.000,00
1102001	Bank B CA Rp 001-3020121	23.544.502,72	9.415.000,00	5.000.000,00	27.959.502,72
1102002	Bank B CA USD 035-3333333	59.810.988,00	4.000.000,00	14.400.000,00	49.410.988,00
1104	Piutang Dagang	97.765.333,80	43.500.000,00	10.000.000,00	131.265.333,80
1110	Piutang Lain-Lain	600.000.000,00	0,00	0,00	600.000.000,00
1114999	Uang Muka Lain-Lain	1.320.000,00	0,00	0,00	1.320.000,00
1116003	Biaya Sewa Dibayar Di Muka	6.000.000,00	0,00	0,00	6.000.000,00
1118003	PPh 23 Dibayar Di muka	1.019.552,40	0,00	0,00	1.019.552,40
1120	Persediaan Barang	10.000.000,00	22.000.000,00	25.000.000,00	7.000.000,00
1301	Tanah	100.000.000,00	0,00	0,00	100.000.000,00
1302	Bangunan	133.000.000,00	0,00	0,00	133.000.000,00
1303	Kendaraan	30.000.000,00	0,00	0,00	30.000.000,00
1304001	Peralatan Kantor Furniture	28.100.000,00	23.600.000,00	0,00	51.700.000,00
1304002	Peralatan Kantor Logam	4.140.000,00	4.140.000,00	0,00	8.280.000,00
1304003	Peralatan Kantor Komputer & Printer	90.330.009,60	90.330.009,60	0,00	180.660.019,20
1304004	Peralatan Kantor Software	10.000.000,00	0,00	0,00	10.000.000,00

Figure 17. Balance sheet.

Conclusions and Recommendations

Conclusions

The analysis of SMEs in cluster Kampung Batik Surakarta Laweyan provides an overview as a basis for the design of the SMEs accounting information system. SMEs accounting information system which includes SMEs organizational structure, SMEs the general design of the accounting information systems, flowchart of each system, document system, database, and SMEs accounting information systems software.

Recommendations

Future research, the SMEs accounting information system used in the business process of the company, and the research measurement the productivity of SMEs accounting information system and audit information system in SMEs.

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