

Cloud Computing Accounting Information System Design of Business Entity Village Owned (BUMDESA)

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ABSTRACT

This study aims to design an accounting information system for business entities—Village-owned (BUMDesa) Ketapang Banyuwangi with cloud computing. BUMDesa Ketapang has experienced good development in the last five years but has not been matched by an effective accounting system. The research methodology used is qualitative exploratory research with PIECES analysis. The results of this study refer to the cash receipt cycle, cash disbursement, and reporting cycle starting from recording transactions from the business unit and reporting to the treasurer then recorded in a journal, posted to a ledger, and producing financial reports in the form of a Financial Position Report, Profit Loss Report, and cash flow statements. The processes shown are data flow diagrams (DFD), flow charts, entity-relationship diagrams (ERD).

Keywords-- Accounting Information System, Cloud Computing, BUMDESA, Financial Statement, Banyuwangi

which only provides information on BUMDesa's income from business units, total BUMDesa expenditures, and BUMDesa cash balances in period X. This situation causes operational executors, both chairman/director, treasurer, and business unit coordinator to know what are the actual assets of BUMDesa, its income, operating expenses, and BUMDesa's profit.

In the current digital era, BUMDesa Citra Mandiri has followed technological developments. BUMDesa, through the Ketapang Village Government, also collaborates with Icon Plus (a subsidiary of PT. PLN) for internet service providers; BUMDesa also gets e-commerce software assistance from PT. Plus icon (www.desa-ketapang.id). The BUMDesa office is also connected to the village wifi, where Ketapang Village bears the burden. Operational executives can operate computers, cell phones based on Android and access the internet. The conclusion is that BUMDesa's operational executives are not technologically illiterate. How environmentally friendly the technology facilities and capabilities currently exist in BUMDesa are also being used to support improvements to the rudimentary BUMDesa accounting system. Improvements made are by designing a new accounting system by utilizing the contribution of information technology, namely the internet, considering that the work is made easier and more efficient with technology. Therefore, it aims to produce an accounting information system design at BUMDesa Citra Mandiri Ketapang, which consists of accounting cycles of cash receipts, cash disbursements, and-based reporting cloud computing to make it easier for BUMDesa Citra Mandiri operations to record financial transactions electronically and present financial reports useful for internal BUMDesa.

I. INTRODUCTION

BUMDesa is a forum for village governments and their citizens to proportionally implement village programs aimed at boosting economic development in rural areas. Banyuwangi Regency has 131 BUMDesa, which are divided into three classes, namely 12 developing BUMDesa, 17 less developed BUMDesa, and the rest are BUMDesa which are still in the pilot stage. BUMDesa Citra Mandiri Ketapang Village is included in the developing BUMDesa group. In 2018, this BUMDesa often receives many visits from various regions because it has good business unit management, can meet the basic needs of the people of Ketapang Village and its surroundings through the services of the established business units, the turnover generated can reach IDR 11,000,000 per month. However, the development of BUMDesa is not supported by a good accounting system for financial transactions at BUMDesa. There are no journals to record transactions, do not have financial statements (balance sheet and profit and loss) to present information, and no system controls cash receipts and disbursements in business units in BUMDesa. The method of recording transactions uses a single entry that lacks information,

II. LITERATURE REVIEW

According to [1], an information system is a collection of resources, both equipment and humans, designed to convert financial and other data into information either manually or through a computerized system in processing input into an output. The cash receipt information system is an information system that receives and processes data relating to the flow of cash receipts into the organization and produces accounting

information from the organization's cash receipt activities. Consists of 3 activities, namely receiving payment slips from consumers, receiving cash and entries in a journal, and posting to the ledger. Cash disbursements expenditures are expenses, check expenses and expenses. Usually, the cash business process uses a voucher system. The reporting information system is a business process that consists of 5 activities, namely general ledger entries, updating ledgers, making financial report journals, making management reports.

According to [2], cloud computing is a computing model in which unregistered computers, storage, software, and other services are provided as a virtualized collection of resources over the network, especially the Internet "Cloud" resources. This computing power can be based on the requirements of the connected device and location. There are three cloud computing services: Infrastructure As A Service, Software as A Service, and Platform as A Service. According to [1] the system design definition is a formulation blueprint for a complete system. System design comes from general to specific. The general functions and objectives to be achieved by a particular system must be determined in advance (analysis). The system design works backward from output to input. They are working with system objectives, compiling all management reports, and operational results documents as the first step. Statements Reports generated from the accounting cycle and provide information debt financial reports [3]. This organization's financial statements are the Statement of Financial Position, Income Statement, and Cash Flow Statement.

The cost-benefit analysis helps any management from the proposed system from the costs incurred [4]. Three steps in the application of cost-benefit, cost identification (one-time recurring costs), benefits insurance (tangible benefits / intangible benefits), comparing costs and benefits (Net Present Value / Payback Period).

III. RESEARCH METHOD

This approach is qualitative exploratory with the case study method, which means exploring, searching for, and compiling the phenomena being studied to answer the problems formulated [5]. This approach was chosen to answer the formulation of this research problem, namely, interviews and interviews. The research scope of the research subject is BUMDesa Citra Mandiri Ketapang Village. The research object is the accounting system in BUMDesa Citra Mandiri Ketapang Village, which focuses on the cycle of cash receipts and cash disbursements.

There are two types of data used in this study, namely primary data and secondary data. Primary data were obtained from research subjects with direct observation at BUMDesa Citra Mandiri Ketapang

Village, interviews with resource persons, namely the director/chairman of BUMDesa, BUMDesa secretary, BUMDesa treasurer, and deputy coordinator of business units.

IV. RESULTS AND DISCUSSION

BUMDesa Citra Mandiri was established on December 27, 2012, having the legal basis of PERDES No. 6 of 2013 concerning BUMDesa Ketapang and SK (Decree) Number 188/030 / KEP / 429.505.03 / 2013 concerning the Composition of BUMDesa Citra Mandiri Village Management in Ketapang Village, Kalipuro District. This BUMDesa has six storage business units, namely loans, multipurpose shops (convenience stores), online bank payment points (PPOB), village markets, waste transportation services, and community associations of drinking water users. Each business unit is led by a business unit coordinator responsible for running the business unit's business processes.

The source of BUMDesa's cash receipts comes from cash deposits for six business units. The business coordinating unit deposits money every month to the BUMDesa treasurer. The cash has been deducted from the expenses in each business unit, and the remainder of the revenue has been deposited with the BUMDesa treasurer, but several business units such as the Department Store and Garbage Transport Service deposit the same nominal amount (based on interviews and analysis in BUMDesa's general cash book) [6].

The cash receipt document is a transaction record in the general cash book. In contrast, the cash receipt transaction book is an entry slip signed by the BUMDesa Treasurer as the cash recipient. The deposit amount from the business unit coordinator received by the BUMDesa treasurer has no criteria for the transaction to be valid or invalid. These cash receipts are received and called by the treasurer; even the BUMDesa treasurer also has a *dual job*, namely, the PPOB business unit coordinator. Supervision of cash in BUMDesa is handed over to the treasurer; the treasurer can only access BUMDesa access control [7, 8, 9, 10].

BUMDesa cash expenditures are borne by BUMDesa's cash; examples are employee salaries, electricity loads, and vehicle repair expenses. The BUMDesa treasurer issues BUMDesa cash when the business unit coordinator requests cash disbursements to pay for business unit expenses that cannot be *covered* by the cash expenditure business unit is of great value. Prior cash disbursement to the BUMDesa director, the approved evidence of evidence in the form of purchase notes or payment receipts given to the treasurer [11, 12, 13].

All transactions in BUMDesa are reported by the treasurer in the BUMDesa General Cash Book, consisting of expenditures and ending balances. Cash receipts and disbursements have previously been reported. At the same time, the ending balance contains

information on the *history* of BUMDesa cash balances per transaction date. The following is a record of cash receipts and disbursements transactions in the general cash book of BUMDesa Citra Mandiri Ketapang in August 2018.

Analysis of system revenues and expenditures based on the results of the interview to the director for / chairman, treasurer, secretary, and one unit coordinator as follows: [14]

System Cash Receipts

1. Performance (Performance)

System cash receipts currently have a slow performance to produce BUMDesa turnover information. Because it turns out that what is deposited and reported to BUMDesa is the profit of the business unit and not the revenue per unit.

2. Information (Information)

The information generated is inaccurate because of the claimed turnover of Rp. 11,000,000 per month has not been accumulated because several business units only inform the profit, not the total turnover. Furthermore, the time it takes to access the old information is one month because it is waiting for the business unit to report and deposit cash.

3. Economics (Economics)

The current system is a less useful low cost. Because the reports produced are different, the records used are also different, making it difficult for the treasurer.

4. Control (Control)

Control in BUMDesa still loose on the authorization of transactions, segregation of duties, supervision, accounting records should be improved to prevent fraud or error.

5. Efficiency (Efficiency)

The Receiving System that was in effect previously currently minimal human resources and included costs but does NOT work efficiently because the resulting information is incomplete because it does not use a journal, and there is NO big book so it can NOT present financial reports.

6. Service (Service)

The current system does not create quality services because it does not provide accurate information and lacks coordination between operational executives.

Cash Disbursement System

1. Performance (Performance)

The cash disbursement system can produce information on operating expenses. However, it is not detailed and less informative (slow) because they still have to look for their business expenses one by one in the BUMDesa general cash book.

2. Information (Information)

Accurate information is accurate but not timely. When needed, you still have to wait to find expense X in month X. Because cash disbursements are not given an account name, only a description.

3. Economics (Economics)

The current system is a less useful low cost. Because it still takes time (it takes time) to see what business expenses are being incurred.

4. Control (Control)

Control of the cash disbursement system in BUMDesa is already profitable and better than the cash receipt system. It is just weak in accounting records. Transaction authorization, segregation of duties, supervision, accounting records are good enough.

5. Efficiency (Efficiency)

The current cash spending system is minimal and includes costs. However, it is less efficient because the resulting information is incomplete. After all, it does not use a journal, and there is NO big book, so it can NOT present financial reports.

6. Service (Service)

The current system does not create quality services because it does not provide accurate information and lacks coordination between operational executives. The Concept of Design of Accounting Information System Design for BUMDesa Ketapang is outlined in the context diagram:

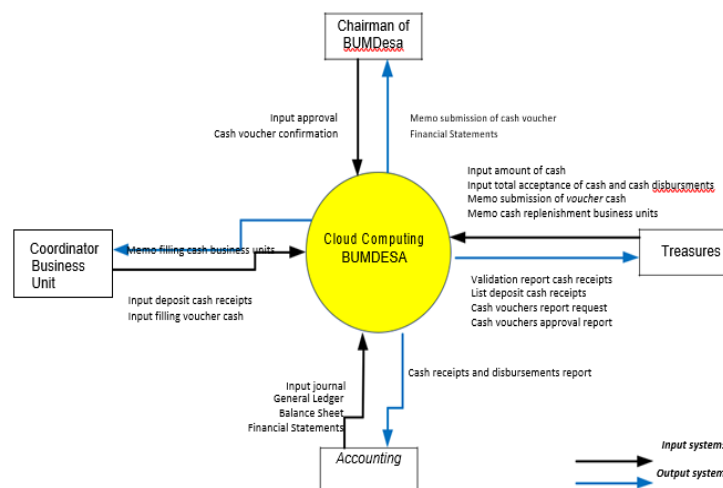


Figure 1: Context Diagram

The proposed system is built using technology cloud computing with software as a service. This design utilizes internet service technology using a virtual server-based center aimed at maintaining BUMDesa financial data and BUMDesa accounting information system applications. Data transactions operated by

operational executors will be stored on a server (cloud), accessed from anywhere and freely by the user via a computer or cellphone connected to the internet network. This Proposed System is accessed using a web browser 2.0 application because it is built on a web basis.

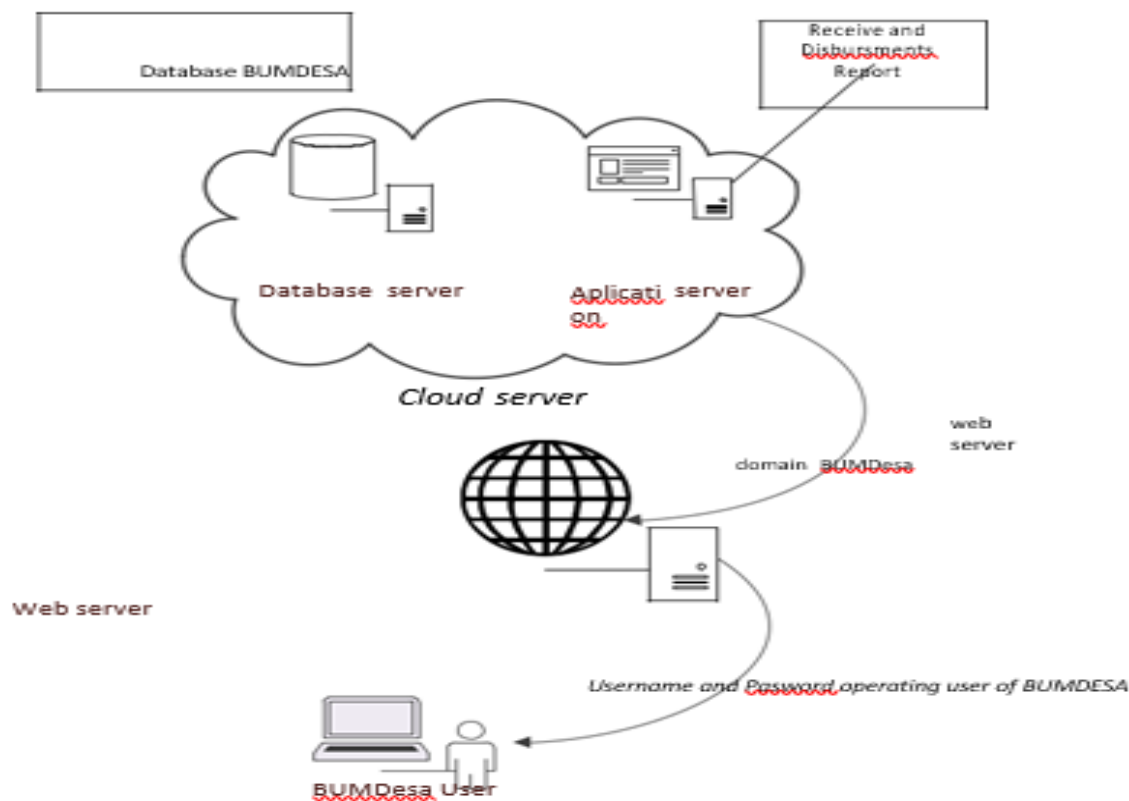


Figure 2: Cloud Computer

The investment to implement cloud computing technology at BUMDesa Citra Mandiri Ketapang, which uses software as a service (SaaS), does not require a fee, assuming that BUMDesa Citra Mandiri Ketapang infrastructure already has a good internet connection as explained in Darmaji and Rianti's research (2011) with title Economic Feasibility Analysis of Cloud Computing at Microfinance Institutions in Indonesia Using the Ranti's Generic Is / It Business Value and Economic Value Added Method: A Case Study at Rural Banks in

Jakarta. Based on the observations of BUMDesa Citra Mandiri Ketapang, it is in one location with Ketapang Village, where the village has a good internet connection because it is supported by the smart kampoeng facility from the Banyuwangi Regency Government. Arrangement of system infrastructure utilizing the services and facilities of the Banyuwangi Communication, Information, and Encryption Office, where the agency can create an information system.

No	Description	Quantity	Unit	Amount	Total	Sources and Timing access
Cost						
Current Costs (Beginning Investments)						
1	Additional accounting employees	1	Person	Rp 800.000	Rp 800.000	Table employer salary of BUMDesa 2018
2	Training new systems	4	Times	Rp 200.000	Rp 800.000	Estimation of consumption cost for ten persons.
Total Cost					Rp 1.600.000	
Benefit						
1	Reduce overnight cost employers	12	Month	Rp 200.000	Rp 2.800.000	Overnight Cost Employers estimation
Total Benefit					Rp 2.800.000	

The current cost is the cost incurred only once or the initial investment cost. The cost required is the addition of BUMDesa employees, namely accounting for salaries that are equal to other BUMDesa employees' salaries. Accounting is needed because the treasurer cannot record transactions in a journal. This aims to improve control over cash and increase the focus on employee performance. If the work is focused, the work can be done quickly and on time to reduce the cost of overtime pay for an estimated savings of IDR 200,000 per month for one employee. New system training is needed to provide direction and learning to BUMDesa employees involved in operating the proposed system. ROI (Return On Investment) calculation to compare costs and benefits. If the ROI is greater than 0, then the system is accepted. It is better to be implemented in BUMDesa Citra Mandiri Ketapang. The ROI calculation is as follows:

$$\text{ROI} = (\text{Total Benefits}) / (\text{Total Costs}) = (\text{IDR } 2,800,000) / (\text{IDR } 1,600,000) = 1.75$$

The ROI calculation shows a result of 1.75 greater than 0. The proposed cloud computing-based accounting information system for BUMDesa is accepted. It is better to be implemented as a new system.

V. CONCLUSIONS

The proposal for a cloud computing-based accounting information system at BUMDesa Citra Mandiri Ketapang, which consists of cycles of cash receipts, cash disbursements, and reporting, helps BUMDesa create BUMDesa financial reports. The financial statements consist of financial position statements that are useful for knowing the total balance on the BUMDesa balance sheet. An income statement that presents BUMDesa's income from business units, financial expenses incurred during the period, and the net profit generated by BUMDesa. A cash flow statement that presents cash flows into and out of three activities: operations, investing, or financing. The proposed cloud computing-based accounting information system helps operational executives find out during period X whether BUMDesa's financial condition is improving or vice versa. The information obtained from the financial statements can determine the next action/decision. For example, is the BUMDesa ready in year X to open a new business unit with this amount of cash and capital of this amount? If the cash and capital are not sufficient, do you have to request an injection of funds from the village or apply for a bank.

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