International Journal of
Science and Engineering Investigations vol. 7, issue 80, September 2018
ISSN: 2251-8843

Design of Technology-Based Accounting System: Small and Medium Enterprises of Batik Crafts Industry in Indonesia

Siti Nurlaela[1], Solichul Hadi[2], Pramono Hadi[3], Bambang Mursito[4]
[1,2,3,4]University Islamic Batik of Surakarta Indonesia
([1]dra_nurlaela@yahoo.com, [2]shadibakri@yahoo.com, [3]hadi_pram@yahoo.co.id, [4]bambang.mursito16@gmail.com)

***Abstract*-**The aim of the Higher Education Leading Development Research is to design a technology-based accounting system model for small and medium-sized businesses in the batik craft industry: 1) to design (prototype) technology-based accounting systems that are suitable or fit for small and medium-sized businesses in batik craft industries, and 2) to evaluate the efficiency and effectiveness of the application of technology-based accounting bookkeeping system models for small and medium enterprises in the batik craft industry. The formulation of the research problem of small and medium businesses or users has difficulty expressing their desire to get applications that are in accordance with their needs Small and Medium Enterprises Batik Crafts Industry. This difficulty needs to be resolved to find out the needs of the user and translate them into a model (prototype).

Keywords- *Technology-Based, Financial System, Prototype*

I. INTRODUCTION

Global market growth stimulates competition and government power to adopt policies based on markets both domestically and internationally. Modern technology greatly reduces the cost of information and capabilities to participate in the global economy. In fact, there is enough evidence that small medium enterprises are not only developed in the domestic economic sector, but their presence in the international community has good growth (Char, Yasoa and Hassan, 2010). Corporate global business results from research and development, it is primarily aimed at the needs of large companies, so there is often a lack of knowledge about the latest and emerging technologies including the Internet in Small and Medium Enterprises (Decker et al., 2006). Although Internet technology is global and their core is standardized, their applications can and need to be adapted to local circumstances (Tetteh & Burn, 2001). The internet offers this extraordinary ability to reconcile global uniformity and local flexibility. This facilitates cross-border links, but at the same time creates new network configurations and clusters (Indjikian, 2003).

Indonesia began in 2012 large-scale companies using large Financial Accounting Standards that adopt International Financial Report Standards (IFRS) while for Micro and Small and Medium Enterprises can use Financial Accounting Standards - Unaccountable Entities (SAK-ETAP) which are of course simpler (International Financial Report Standards, 2012). Some advantages of using technology-based systems: a) fast data processing; b) has a high level of information accuracy; c) efficiency of human resources and d) ease of access to information (Permatasari, 2011). Small and Medium Enterprises are classified into three different categories according to their abilities and their success goes through challenges. First, a group of Small and Medium Enterprises that are able or able to compete internationally can benefit from nationalization (McMahon, 2001). The second group is Small and Medium Enterprises that are less able to adapt to the globalization of pressure. They cannot survive in the current situation without moving quickly to increase productivity, to comply with international standards, to train and employ skills management and professional staff to face competition. The third group is Small and Medium Enterprises that are protected by the government from the effects of globalization (Samad, 2007).

Small and Medium Enterprises on the other hand are often flooded with limited capital for R & D business development. Because innovation is very important in R & D aspects, Small and Medium Enterprises can diagnose their current business position and strategically plan desired changes by increasing them operational capability. Most importantly, they might try to take practical steps to evolve from the efficiency of Small and Medium Enterprises all the ways to Small and Medium Enterprises innovation (Hong & Jeong, 2006).

Based on the above background, the formulation of the problem in this study is as follows: "How to Prototype the Design of Technology-Based Financial Systems for Small and Medium Enterprises in the Batik Craft Industry in the Karanganyar District of Central Java Indonesia?".

The aim of the Higher Education Leading Development Research is to design a technology-based accounting system model for small and medium-sized businesses in the batik craft industry: 1) to design (prototype) technology-based accounting systems that are suitable or fit for small and medium-sized businesses in batik craft industries, and 2) to evaluate the efficiency and effectiveness of the application of technology-

based accounting bookkeeping system models for small and medium enterprises in the batik craft industry.

II. THEORY REVIEW

Technology is computer hardware that is used to assist input, processing, and output activities in information systems, computer software consisting of instructions that have been programmed to control and coordinate the work of computer hardware, data storage technology, telecommunications technology that facilitates managers communicate from one place to another (Husein, 2002). Information technology has a very real influence in many industries and all aspects of the economy, while the continuation of business and companies to consider change. The use of technology is revolutionizing company rules, the result is in the transformation of corporate structure. Modern business is not possible without the help of information technology which has a significant influence on small and medium size enterprise operations (Namani, 2009). The main benefits of using computers in data processing; can process transactions with larger volumes or capacities in a certain time, can work all day without stopping and without making mistakes,) can process complicated transactions effectively and efficiently. Automatically follows a detailed set of instructions according to programs that have been arranged precisely and consistently, can store data more neatly, while consolidating a lot of data, can integrate transaction processing cycles and files, with telecommunications networks, both cable and satellite can connect data files in remote and separate places, can help update data and information at any time, and can present reports in more detail, on time, and selectively according to needs (Wilkinson, 1994).

The definition of prototyping system development process often uses a prototyping approach. This method is very good to be used to solve the problem of not understand between the user and the analyst that arises due to the user is not able to clearly define their needs (Mulyanto, 2009). Prototyping is a fast development and testing of a working model (prototype) of a new application through an interaction process and repeatedly used by information systems experts and business experts. Prototyping is also called simple fast application design and accelerates system design (O'Brien, 2005). Based on the characteristics of a system prototype can be in the form of low fidelity and high fidelity. Fidelity refers to the level of detail of a system (Walker et al, 2003). Low fidelity prototype is not very detailed describing the system. Characteristics of low fidelity prototypes are having limited functions or interactions, better describing the design and layout concept compared to the interaction model, not showing in detail the operation of the system, demonstrating in general the feel and look of the user interface and only describing the concept of a general approach (Walker et al, 2003).

High fidelity prototype is more detailed describing the system. This prototype has full interaction with users where users can enter data and interact with the system, representing core functions so that they can simulate most of the functions of the final system and have an appearance that is very similar to the actual product (Walker et al., 2003). Features that will be implemented on the system prototype can be limited by vertical or horizontal techniques. Vertical prototypes contain detailed functions but only for selected features, not the entire system features. Horizontal prototype includes all user interface features but without the main function is only a simulation and cannot be used to do the actual work (Walker et al, 2003).

Data flow diagrams (data flow diagrams) are a graphical documentation tool that uses symbols to explain a process. This diagram shows the flow of the entire system process to the user and the details can be adjusted according to the user's understanding ability. Data Flow Diagram consists of three elements namely environment, processing, data flow and data storage. One of the advantages of using DFD is that it is easier for users who lack control of the computer field to understand the system that is being worked on (Ladjamudin, 2005). System flow diagram (System Flow chart) is equipment used to describe the system process in detail to describe the flow of information systems and system flow diagrams to describe program flow (Ladjamudin, 2005). Entity relationship diagrams show between entities one another and the form of relationships so that the data is integrated into one integrated entity (Ladjamudin, 2005).

III. RESEARCH METHODS

Research Design this study researchers used an explanatory research design by conducting a survey (depth interview) on the Small and Medium Enterprises of the Batik Industry. The research subjects were S Mes in Karanganyar Regency, while the research object was the SME bookkeeping system. This research is directed to design and apply technology-based Small and Medium Enterprises bookkeeping systems. The population in the study is Small Businesses Preventing Batik Craft Industry located in Karanganyar Regency. Whereas the sample of this study is Small Business to Prevent Batik Craft Industry, with the following criteria: (1) Is a Batik company, (2) Scale of Micro and Small Businesses, and (3) Is a Family Business.

The data collection model in this action research has several stages along with the research output summarized in Table 1.

TABLE I. SEVERAL STAGES OF DATA COLLECTION MODEL

Stage	Activity	Outcome
Stage 1: Identify Problems	Object Data Collection. Field Survey and Interview. Analysis of Survey and Interview Results.	List Problem Small and Medium Business. Modeling of Book keeping Systems and Layout Designs That Fit Each Small and Medium Enterprises Batik Crafts Industry
Stage 2: Planning Action	Design of Accounting Systems for Small and Medium Businesses in the Batik Craft Industry. Planning of the Accounting System Design in the Form of Interface Design That Will Be Displayed in a Computerized Bookkeeping Model to the Display of Reports to be Generated.	Interface Format That Will Be Displayed In A Computerized Bookkeeping Model To The Report Report Display That Will Be Generated.
Stage 3: Implementation of Action	Designing an Accounting System in the Form of Interface Design That Will Be Displayed in a Computerized Bookkeeping Model to the Display of Reports That Will Be Generated Later In the Form of Some Prototypes.	Prototype of Model Based Bookkeeping System Specifically for Small and Medium Enterprises Batik Craft Industry.

In the first year research only designed a number of bookkeeping model prototypes according to the needs of small and medium businesses in the batik craft industry from the results of the initial interview (stage 1). The prototype is based on the needs of selected batik small and medium business groups. Of these prototypes, it will be made and matched back to the needs of the small and medium-sized batik industry and in analysis whether the prototype needs to be adjusted further or not.

The following is a model prototype model 1, model 2 and model 3: Model 1: Make the simplest prototype by not using accounting rules in general. Main Model: Inventory Cards, Cash Transactions (purchases and sales), and Reports (profit reports). Model 2: Make a prototype using accounting rules in general. Main Model: List of Accounts, Customers, Suppliers, Inventory Cards, Journals and Reports (financial statements). Model 3: Make a prototype for Small and Medium Enterprises that have more than one type of business. Main Model: List of Accounts, Customer Data, Supplier Data, Inventory Cards, Journals and Reports (financial statements). Through this link allows the resources to flow from one subsystem will be input (input) for other subsystems through a link. With the liaison also one other subsystem forms a unity (Jogiyanto, 2005). Hypothesis testing; Allegedly Prototype of Technology-Based Financial System Design of Small and Medium Enterprises in the Batik Craft Industry in Karanganyar Regency, Central Java, Indonesia by supporting the speed of information making of financial statements.

IV. RESULTS AND DISCUSSIONS

Based on the results of the planning stage, the actions taken at the implementation stage of the action are: the making of bookkeeping models to produce financial reports of small and medium enterprises of batik-based handicraft industries that have been adapted to select Small and Medium Enterprises. Bookkeeping recording consists of recording the principal (organization of forms, notes and reports), recording accounts receivable, debt, costs, cash and related to store image, among others: Operations (recording of inventory cycles consisting of display of merchandise, goods in warehouses and safekeeping items, diversity of merchandise, number of outlets, pricing of merchandise, recording of fixed assets, such as storefronts / display racks, cash registers, and supporting equipment another store).

Reputation (recording of the number of customers, image recording of Small and Medium Enterprises) that will be measured by the number of transactions that occur in Small and Medium Enterprises, the number of items purchased in each Small and Medium Enterprise customer, etc.). Relational (recording of customer response to store employee knowledge of merchandise, proximity to employees, etc.) that will be marked by recording the number of transactions that occur.

Field studies have been carried out from several business units, here is a summary of the findings in the shops observed: Most Small and Medium Enterprises, do not have bookkeeping records at all, consumer purchases are made in cash or sometimes owed / paid at the end of the month. The reason for the Small and Medium Enterprises is diverse, ranging from feeling no need to do the recording, until there is no energy to do this recording. The researcher tries to change the "mindset" by giving inputs about the importance of recording to support the progress of his business.

There are a number of Small and Medium Enterprises that have done the recording, although it is still done manually for Small and Medium Enterprises, it has a larger scale than the group has begun to realize the importance of bookkeeping recording in order to smooth operations still reluctant to use technology systems. The reason Small and Medium Enterprises on average is "clueless", does not yet know how to enter manual bookkeeping into technology systems or the software available on the market is not "fit" or too complex with the needs of Small and Medium Enterprises.

There are two small and medium businesses selected for system implementations have been identified as having a bookkeeping system that is not technology-based, and not yet integrated. Morinda Batik and Widodo Kencono Batik both Small and Medium Enterprises, there is no tax calculation yet, and the calculation of integration between the number of available stocks and those recorded is not well integrated. For the treatment of these Small and Medium Enterprise, the bookkeeping system will be integrated so that recording can be better integrated and the recording process can run faster and easier.

V. CONCLUSIONS

Hypothesis testing; Allegedly Prototype of Technology-Based Financial System Design of Small and Medium Enterprises in the Batik Craft Industry in Karanganyar Regency, Central Java, Indonesia by supporting the speed of information making of financial statements. Based on observations and surveys by conducting interviews with several Small and Medium Enterprises in the batik craft industry, researchers obtained several findings that would be used to compile several prototypes.

The following is a prototype designed based on the findings in the field: Model 1 prototype; very simple, do not apply accounting rules for bookkeeping models. Transactions that occur occur in cash. From the results of the discussion, business people only want to know information about inventory, records for purchases and sales in cash and profit reports. Therefore, researchers designed prototypes by giving several sheets (work papers): menu lists, goods lists, initial inventory, inventory cards, January-December purchases, January-December sales, and Profit Reports (applications using Excel). Model 2 prototype; use accounting rules for bookkeeping models. From the results of the discussion, business people need information ranging from recording transactions to financial statements. Therefore, the researcher designed the prototype by giving several sheets (work papers): menu list, account list, item list, customer data, supplier data, inventory card, inventory report (initial), inventory report (end), January-December transaction , purchase reports, sales reports, balance lists, and financial statements (applications using excel). Model 3 prototype; use accounting rules for bookkeeping models. This model prototype has the same working paper with model 2 while the difference is that the application is used to report more than one business (the application uses Excel).

ACKNOWLEDGMENT

Ministry of Higher Education Technology or Grant of Higher Education Leading Development Research Scheme in 2018 - 2020.

REFERENCES

[1] Char, A.K Yasoa, R.M and Zakiah H, 2010; Small and Medium Enterprise Competing in the Global Business Environment: A Case of Malaysia; International Business Research, Vol. 3 No. 1, pp. 66-75.

[2] Decker, M., Schiefer, G. & Bulander, R. (2006). Specific challenges for small and medium-sized enterprises (SME) in M-business: a SAME-suitable framework for mobile services. Proceedings of the International Conference on E-Business (ICE-B 2006), Setúbal, Portugal: INSTICC.

[3] Hong, P. & Jeong, J. (2006). Supply chain management practices of S Mes: from a business growth perspective. Journal of Enterprise Information Management, 19(3), 292-302.

[4] Indjikian, R. (2003). E-finance for S Mes: global trends and national experiences. The World Bank Conference, Washington: UNCTAD. [On-line]. Available: http://www.unctad.org/ecommerce.

[5] Jogiyanto, 2005, Analysis and Design (Information System: structured approach to business application theory and practice), Yogyakarta: ANDI.

[6] Moleong, Lexy J., 2005, Qualitative Research Methodology, Bandung: PT Remaja Rosdakarya.

[7] McMahon, R. G. P. (2001). Business growth and performance and the financial reporting practices of Australian manufacturing S Mes. Journal of Small Business Management, 39(2), 152-164.

[8] Namani, M.B., 2009; The Role of Information Technology in Small and Medium Sized Enterprises in Kosova; Fulbright Academy 2009 Conference.

[9] Samad, N. A. (2007). Positioning Malaysian S Mes in the global. Proceedings of the 2007 IKS National Court, Kota Kinabalu: North University of Malaysia.

[10] Thomas, J. & Evanson, R. V. (1987). An Empirical Investigation Of Association Between Financial Ratio Use And Small Business Success. Journal of Business Finance & Accounting, 14 (4), 555-571.

[11] Tetteh, E. & Burn, J. (2001). Global strategies for S Me-business: applying the SMALL framework. Logistics Information Management, 14 (1/2), 171-180.

[12] Wright, R.W. & Etemad, H. (2001). S Mes and the global economy. Journal of International Management, 7, 151-154.

Siti Nurlaela, Assoc. Professors. Accounting Profession Education and Master of Accounting at Sebelas Maret University Surakarta.

Lecturer Accounting Department Faculty of Economics, University Islamic Batik of Surakarta. Indonesia.