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Implementing Inventory Management System At Toko Sinar Pratama

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Abstract

Sinar Pratama Store is an MSME located in Tanjung Uban that sells bicycles, motorcycle equipment, lawn machines, etc. The issue that Sinar Pratama Store has is the shop owner's difficulty in checking inventory. From the start of business, store supplies have only been recorded manually in books and notes. Therefore, this community service activity aims to design an inventory recording system at Sinar Pratama Store. The methods used in this project are interview, observation, and system simulation. The output of this project is a Microsoft Excel-based inventory management system which contains input of product lists, inventory journals, stock cards, remaining stock reports, and sales reports. After implementing this inventory management system has made it easier for the store to carry out operational activities and maintain a smooth operating cycle. Further projects are recommended to develop systems that support the operation of more resilient facilities.

Keywords: *community service, inventory management system, operational*

Introduction

MSMEs have an important role in contributing to Indonesia's economic growth, because MSMEs make a significant contribution in increasing gross domestic product and employment. MSMEs absorbed around 97% of the national workforce in 2018 (UKM Indonesia, 2018). MSMEs are also believed to have high economic resilience because they can support the stability of financial system and economy (Bank Indonesia, 2020).

Even though we have entered the digital era that continues to grow, there are still many MSME owners who use traditional methods in managing operational, one of which is inventory recording. Manual bookkeeping can induce risk of writing errors such as incomplete information, incorrect nominal or incorrect writing of zeros (Rahmasari, 2019). In addition, the success of an MSME is not only seen from how many products are sold, but also from the precise and neat recording of the MSME (Kompas, 2018). One of the MSMEs that has problem in recording inventory is Sinar Pratama Store.

Sinar Pratama Store was founded since 2002 by Mr. Joe Seng Alias Husin, which now is being succeeded by his son, Mr. Andri. This shop is engaged in trading, namely selling motorcycle equipment, bicycles, lawn machines, etc. The store is located on Permaisuri Street no. 5, Tanjung Uban City. The store's operating hours are 08.00 am to 8.00 pm from Monday to Sunday. The number of employees at this store is five people, including the accounting and marketing positions which are managed by Mr. Andri and his wife.

The issue that Sinar Pratama Store has is the shop owner's difficulty in recording inventory. From the start of business, store supplies have only been recorded manually in books and notes. The shop owner admitted that he had difficulty in checking inventory because he only relied on books and sales receipts. This is considered less effective when searching for the data needed. In addition, shop owner also has the risk of losing receipts containing the amount of inventory, making it difficult to know the number of items sold.

Along with the many transactions and variations of goods in the store as well as the inadequate inventory recording, store owner need the right inventory system to make it easier for the store to carry out operational activities and maintain a smooth operating cycle. This is where the author plays a role not only to investigate the problem faced by MSMEs but also to help design an inventory system using Microsoft Excel software. The decision to use Microsoft Excel is not made by the author alone but also based on the ability of store owner. Store owner admit that it is difficult to use accounting software because it is not cheap and too complex for the MSME level.

The objectives of community service project at Sinar Pratama Store are:

1. Designing a Microsoft Excel-based inventory management system that records incoming and outgoing goods as well as generate inventory reports.
2. Implement the inventory system that has been designed to the store.
3. Improve store performance to be more effective and efficient.

Methods

The methods used in this project are interview, observation, documentation, and system simulation. Data collection methods in this project will be described in the following:

1. Interview

Interview is suitable to be used as a preliminary study so that the author can find out the problem or issue and determine the topic of this study, besides that this technique is also suitable to be applied to a small number of respondents (Sugiyono, 2019). In this project the respondent is Mr. Andri as the store owner of Sinar Pratama Store.

2. Observation

Observation are suitable for this study because it is related to work procedures, human behavior and there are not many subjects being observed (Sugiyono, 2019). In this project the author observes the procedures of store

owner and his employees in managing and recording inventory in daily operational activities.

3. Documentation

Documentation are used as a source of information obtained through the form of documents, books, archives, numerical writings, illustrations, and so on that support the study (Sugiyono, 2019). In this project the author uses documentation in the form of a notebook and notes.

The procedure for this project begins with the author conducting a survey in order to find a place to carry out community service activities. After finding the right location, the author met and asked for approval from the owner to use the store as a PKM location. The location of this community service is at Sinar Pratama Store which is located on Permaisuri Street no. 5, Tanjung Uban City. After that the writer conducted interviews with the shop owner to identify problems faced by store owner and determine the aims of this project. Afterwards the writer collects the information and data needed by this project. After collecting the data, the writer started to design a Microsoft Excel-based inventory management system to be implemented in Sinar Pratama Store. The results of the project outputs are compiled by the author in the PKM report.

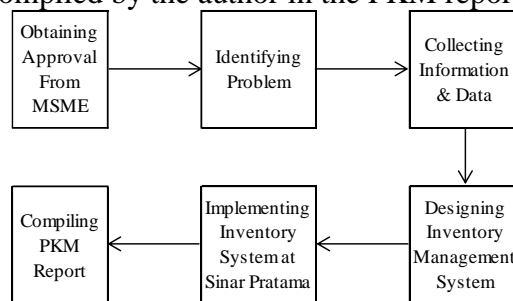


Figure 1. Design Process Flowchart
Source: Author (2021)

This community service project is carried out with schedule and budget of implementation as follows:

No	Implementation Date	Activities
1	05 September 2021 - 06 September 2021	Site survey
2	07 September 2021 - 08 September 2021	Interview in preparation stage with store owner
3	09 September 2021 - 05 December 2021	Consultation with advisory lecturer
4	12 September 2021 - 10 October 2021	Designing system
5	23 October 2021 - 20 November 2021	System implementation and provide guidance to store owner
6	1 November 2021 & 24 November 2021	Evaluation and feedback system by the store owner
7	26 November 2021 - 19 December 2021	Preparation and finalization of report

Figure 2 Project Implementation Schedule
Source: Author (2021)

No	Activities Arrangement	Budgeting Type	Volume	Unit	Amount	Net Amount
1	Observation and interview	Consumption Cost	10	Time	Rp 25.000	Rp 250.000
		Transportation costs	4	Time	Rp 120.000	Rp 480.000
		Internet Connection Cost	1	Pcs	Rp 48.000	Rp 48.000
2	System design	Module Development Fee	1	Pcs	Rp1.200.000	Rp1.200.000
		System Design Cost	1	Pcs	Rp2.599.000	Rp2.599.000
3	Assistance in system implementation	Transportation costs	6	Time	Rp 120.000	Rp 720.000
		Internet Connection Cost	1	Pcs	Rp 48.000	Rp 48.000
4	Compiling Report	Report Printing Cost	1	Time	Rp50.000	Rp 50.000
TOTAL BUDGET						Rp5.395.000

Figure 3. Activity Implementation Budget
Source: Author (2021)

Result and Discussion

The following is the output that has been designed by the author for this project:

1. Main Menu

On the main menu users can fill the period of recording and choose to fill the intended forms. For example if users want to see products list, they may click “product” in the main menu and it will immediately enter the products list sheet. Furthermore, users can access inventory journals, stock cards, remaining stock reports, and sales reports by just clicking the menu and it will immediately direct them to desired form.

Toko Sinar Pratama		
PERIODE		
1	Oktober	2021
SAMPAI DENGAN		
1	November	2021
JURNAL		
PRODUK	KARTU STOK	SISA STOK
PENJUALAN		

Picture 1. Inventory System Main Menu
Source: Author (2021)

2. Product List Form

The product list is a mechanism for controlling the inventory of Sinar Pratama Store so that the inventory in the store can be used efficiently. The product list is created in an orderly manner where it is represented as a list of stock items with details of each line item. This form requires the entry of product code, product name, unit, minimum stock, initial stock, selling price, purchase price, category, and supplier.

Toko Sinar Pratama									
DAFTAR PRODUK									
1 Oktober 2021									
NO	KODE PRODUK	NAMA PRODUK	SATUAN	STOK MINIMUM	STOK AWAL	HARGA JUAL	HARGA BELI	KATEGORI	SUPPLIER
1	OL-001	Pertamina Mesrania OB 2T	BTL	15	29	Rp. 80.000	Rp. 36.000	Oli	United Oil
2	OL-002	Pertamina Mesrania Super 2T	BTL	15	32	Rp. 75.000	Rp. 32.000	Oli	United Oil
3	OL-003	Ultraline Racing 2T	BTL	15	25	Rp. 80.000	Rp. 35.000	Oli	United Oil
4	OL-004	Unclube 2T MCO	BTL	15	24	Rp. 120.000	Rp. 75.000	Oli	United Oil
5	OL-005	Evalube Pro 2T	BTL	15	21	Rp. 65.000	Rp. 33.000	Oli	United Oil
6	OL-006	Evalube 2T	BTL	15	25	Rp. 60.000	Rp. 25.000	Oli	United Oil
7	OL-007	Evalube Scootic YX Synthetic 4T	BTL	15	28	Rp. 75.000	Rp. 41.000	Oli	United Oil
8	OL-008	Castrol Activ Low Smoke 2T	BTL	15	27	Rp. 70.000	Rp. 37.000	Oli	United Oil
9	OL-009	Shell Advance SX 2T	BTL	15	16	Rp. 70.000	Rp. 34.000	Oli	United Oil
10	OL-010	Yamalube Motor 2T	BTL	15	25	Rp. 85.000	Rp. 43.000	Oli	United Oil
11	OL-011	Yamalube Outboard 2T	BTL	15	19	Rp. 110.000	Rp. 75.000	Oli	United Oil
12	OL-012	Yamalube Silver 4T	BTL	15	32	Rp. 55.000	Rp. 30.000	Oli	United Oil

Picture 2. Product List Form
Source: Author (2021)

3. Inventory Journal

The inventory journal is a journal used to post physical inventory transactions of various types, such as posting of outgoing and receiving stock, inventory movements, and physical inventory reconciliations. This form requires the entry of date, proof number, product name, product code and description.

Toko Sinar Pratama								
JURNAL PERSEDIAAN BARANG								
1 Oktober 2021 - 1 November 2021								
TANGGAL	NO BUKTI	PRODUK		KETERANGAN	PEMBELIAN	PENJUALAN	MUTASI LAIN-LAIN	
		KODE	NAMA				MASUK	KELUAR
23 Okt 21	1328	BL-006	IRC BAN LUAR 100/80-17 52P-TUBELESS	Penjualan ke walk in customer		3		
		OL-002	Pertamina Mesrania Super 2T	Penjualan ke walk in customer		2		
		PL-049	Sipplas Lem Pipa PVC	Penjualan ke walk in customer		2		
		OL-006	Evalube 2T	Penjualan ke walk in customer		9		
23 Okt 21	1329	PL-017	KIT Motor Multi Guna-Sachet	Penjualan ke walk in customer		6		
		BL-032	MIZZLE BAN LUAR 2.50-17	Penjualan ke walk in customer		4		
		OL-001	Pertamina Mesrania OB 2T	Penjualan ke walk in customer				
24 Okt 21	1330	OL-002	Pertamina Mesrania Super 2T	Penjualan ke walk in customer		10		
		OL-001	Pertamina Mesrania OB 2T	Penjualan ke walk in customer		2		
		BL-006	IRC BAN LUAR 100/80-17 52P-TUBELESS	Penjualan ke walk in customer		2		

Picture 3. Inventory Journal Form
Source: Author (2021)

4. Stock Card

One of the options for tracking inventory is to use stock card. Stock card is a sheet that serves to track all purchases, sales, returns, etc. The card also tracks unit prices and inventory quantities. This form requires the entry of certain product code and it will display the details of goods mutation.

Toko Sinar Pratama						
KARTU STOCK						
1 Oktober 2021 - 1 November 2021						
OL-002						
Pertamina Mesrania Super 2T		JUMLAH		-	16	16
NO	TANGGAL	NO BUKTI	KETERANGAN	MUTASI BARANG		
				MASUK	KELUAR	STOK AKHIR
			Stok Awal			32
1	23 Okt 21	1328	Penjualan ke walk in customer	-	2	30
2	24 Okt 21	1330	Penjualan ke walk in customer	-	10	20
3	26 Okt 21	1341	Penjualan ke walk in customer	-	4	16
4						
5						

Picture 4. Stock Card Form
Source: Author (2021)

5. Remaining Stock Report

Remaining stock report is the summary of the amount of inventory that Sinar Pratama Store has in a certain period. Remaining stock reports contain up-to-date information and use visuals to clarify how many specific items that store has in stock. This report help store owner to avoid over-ordering or running out of goods when customers want to purchases product.

Toko Sinar Pratama									
LAPORAN SISA STOCK									
1 Oktober 2021 - 1 November 2021									
		TOTAL	2.281	-	50	2.231			
NO	KODE PRODUK	NAMA PRODUK	STOK				LEVEL STOK		✓
			SATUAN	AWAL	MASUK	KELUAR	AKHIR	MINIMUM	
1	OL-001	Pertamina Mesrania OB 2T	BTL	29	-	2	27	15	
2	OL-002	Pertamina Mesrania Super 2T	BTL	32	-	16	16	15	
3	OL-003	Ultraline Racing 2T	BTL	25	-	-	25	15	
4	OL-004	Unclube 2T MCO	BTL	24	-	11	13	15	✓
5	OL-005	Evalube Pro 2T	BTL	21	-	-	21	15	
6	OL-006	Evalube 2T	BTL	25	-	9	16	15	
7	OL-007	Evalube Scootic YX Synthetic 4T	BTL	28	-	-	28	15	
8	OL-008	Castrol Activ Low Smoke 2T	BTL	27	-	7	20	15	
9	OL-009	Shell Advance SX 2T	BTL	16	-	5	11	15	✓
10	OL-010	Yamalube Motor 2T	BTL	25	-	-	25	15	

Picture 5. Remaining Stock Report
Source: Author (2021)

6. Sales Report

Sales report is a record of sales activity over a certain period. This report includes information such as number of products sold, selling price, purchase price and percentage of gross profit.

Toko Sinar Pratama									
LAPORAN PENJUALAN									
1 Oktober 2021 - 1 November 2021									
		TOTAL	50	4.060.000	2.063.000	1.997.000	49,2%		
NO	KODE PRODUK	NAMA PRODUK	PENJUALAN				LABA KOTOR (%)		
			JUMLAH	HARGA JUAL	HARGA BELI				
1	OL-001	Pertamina Mesrania OB 2T	2	160.000	72.000	88.000	55,0%		
2	OL-002	Pertamina Mesrania Super 2T	16	1.200.000	512.000	688.000	57,3%		
3	OL-003	Ultraline Racing 2T	-	-	-	-			
4	OL-004	Unclube 2T MCO	11	1.320.000	825.000	495.000	37,5%		
5	OL-005	Evalube Pro 2T	-	-	-	-			
6	OL-006	Evalube 2T	9	540.000	225.000	315.000	58,3%		
7	OL-007	Evalube Scootic YX Synthetic	-	-	-	-			
8	OL-008	Castrol Activ Low Smoke 2T	7	490.000	259.000	231.000	47,1%		
9	OL-009	Shell Advance SX 2T	5	350.000	170.000	180.000	51,4%		
10	OL-010	Yamalube Motor 2T	-	-	-	-			

Picture 6. Sales Report
Source: Author (2021)

The store owner responded well to the implemented system. The author received feedback from the store owner that the system designed is useful for store operational activities, user-friendly and will continue to be used in the future. Some of the benefits experienced by Sinar Pratama Store are:

1. Data input becomes more effective and efficient and the input method is easy to use.
2. The store owner knowing accurately and clearly regarding the remaining stock report.
3. Store owners can input and check the latest inventory anywhere and anytime because it is recorded digitally.
4. Recording becomes neater and reduces the risk of losing inventory data.
5. The results of the inventory report are used by the shop owner to make decisions regarding stock replenishment.

To further evaluate the success of system implementation at Sinar Pratama Store, the author uses several indicators to compare the conditions for before and after the implementation of inventory system which can be seen in the following:

No	Indicator	Development		Explanation
		Before Implementation	After Implementation	
1	Inventory recording media	Recorded in books and notes	Digital based recording (Ms. Excel)	This is because the automation of inventory recording for the store is necessary
2	Estimated time to record inventory	1-3 days after counting manually	1-3 hours after inputting into the system	This is because it is difficult to calculate inventory quickly and accurately
3	Inventory activity monitoring	Only in store	Anywhere	This makes it easier for store owner to check the latest inventory anywhere and anytime
4	Inventory recording format	Without format	Neatly arranged by type of transaction with format	This is because there is no format in the previous recording method causing the store owner faced difficulty in finding the data needed
5	Inventory report results	Only know the estimated inventory quantity	Knows clearly the updated inventory value	This changes help Sinar Pratama Store in making decisions regarding re-order points

Figure 4.
Result of Implementing Inventory System at Sinar Pratama Store

Source: Author (2021)

Integrating sustainability principles in this project can effectively ensure long-term impact and continue to benefit the target community even after initiation. The critical step to sustain this project is to evaluate the project regularly. The constant and consistent evaluation of the project can identify the system's needs. Evaluation results show which activities achieve results, make on-going adjustments to projects and benefit more for the store.

Another major step to ensure sustainability is to make the best use of existing resources. Trained human resources are better prepared, more confident, and effective in implementing and sustaining projects. Mr. Andri can enhance his knowledge of inventory management and supply chain to maximize the use of the system. Mr. Andri can also train his employee to use the inventory system. A

skilled staff and effective leadership are valuable assets in developing and maintaining this community project.

Conclusions

Based on the results of interviews and observations with the owner of Sinar Pratama Store, author had determined the issue that become the topic of this study. Even though it has entered the digital era that continues to grow, Sinar Pratama Store still use traditional method in managing inventory records. This is where the author plays a role not only to investigate the problem faced by MSMEs, but also to help designing an inventory system.

The output of this project is a Microsoft Excel-based inventory management system which contains input of product list, inventory journal, stock card, remaining stock report, and sales report. After implementing the system, Sinar Pratama Store can record sales and purchases of inventory digitally which mean not paper based anymore, this will greatly save time and the store is more effective and accurate in stock management. In addition, recording becomes neater and reduces the risk of losing inventory data.

Further projects are recommended to develop systems that support the operation of more resilient facilities such as:

1. Controlling user access levels on the Ms. Excel inventory system. For example, internal reports can be locked with a user ID and password so it only can be accessed by the store owner.
2. Adding an inventory tracking facility based on location code so that store owner and his employees can save time when searching for the required inventory.

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