

Application of Eoq Method on Inventory Control of Set Top Box in Sales at PT. Indonusa Telemedia

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Abstract:- This study discusses the application of the Economic Order Quantity (EOQ) method in controlling set top box inventory in sales at PT. Indonusa Telemehe. Set top box inventory is an important asset for companies to ensure product availability to customers and avoid excessive storage costs. This study's goal is to increase set-top box inventories so that businesses can manage inventories more effectively. This study uses a quantitative approach by collecting historical data on set top box sales over a certain period. The collected data is then analyzed to calculate the EOQ value based on factors such as demand level, order cost, storage cost, and product requirement level. In addition, ABC analysis is also applied to identify the category of set top boxes that have the largest contribution to the total inventory value. The results showed that the application of the EOQ method can help PT. Indonusa Telemedia in controlling the inventory of set top boxes effectively. The use of EOQ helps avoid an imbalance between ordering costs and storage costs, so companies can reduce overall costs associated with inventory. In addition, ABC analysis also allows companies to focus on managing inventory for more strategic set top box categories.

Keywords:- Application of EOQ Method, Inventory Control, Set Top Box, PT. Indonusa Telemehe.

I. INTRODUCTION

A company's inventory management functions include finding a balance between internal costs and external costs such as those associated with purchasing and storing goods. It seeks to produce the greatest amount of inventory at the lowest cost. (Rambitan et al., 2018)

The reason for the need for *Inventory Management* is due to the emergence of uncertainty in demand, uncertainty in *supplier* supply, and uncertainty in order time. The demand for an item can often be unfulfilled, because the procurement of goods requires a grace period (*lead time*) and during the grace period there is a need for *inventory*. This is because so that the continuity of operational activities can run well and service can be maintained the level of satisfaction with *customers*. Because the problem that often arises in companies is excess or lack of inventory ordered. Excess inventory will result in many risks that will be borne by the company such as damage to goods, warehouse maintenance costs, and large inventory capital. Conversely, less inventory will cause losses such as hampering a production process which results in disappointment to customers and switching

customers to other producers. (Nasution & Prasetyawan, 2008).

If warehouse facilities are available, inventory management analysis in a corporation can be implemented correctly. The intention is for the inventory to constantly be on hand so that it can react rapidly to consumer needs. The inventory issue can be solved so that an ideal inventory procurement policy is obtained at the lowest possible cost by assessing and reporting inventory cases inside the firm.

PT. Indonusa Telemedia is one of the pay subscription TV companies. At first this company only sold pay TV services using satellite, which had to be installed by technicians from satellite dishes to Set Top Box devices that would be installed in customers' homes. Along with technological advances, internet speeds are getting faster, and internet is spread everywhere. People have now begun to switch from satellite TV to a more practical one using Set Top Box that is directly connected to the internet. Where with STB, people do not need to bother installing devices that must be done by technicians, but only need an internet network and connected to a TV. Currently PT. Indonusa Telemedia has developed its business not only selling subscription TV via satellite, now it is through the internet network, which is sold by bundling products with set top boxes. Today almost all internet service providers also sell similar products. PT. Indonusa Telemedia sells products with a sales business model through *Modern Store*. Where PT. Indonusa Telemedia will send STB stock to the store which is almost in all cities in Indonesia. Then each store will make sales to *customers* who come. If there is excess stock or something happens in the store, the item will be asked to be recalled.

Based on initial observations, it is known that the decision making for stock placement in some stores is still in the form of manual calculations that can be said to only guess, how many products will be sent to the store. This can be seen in the picture below:

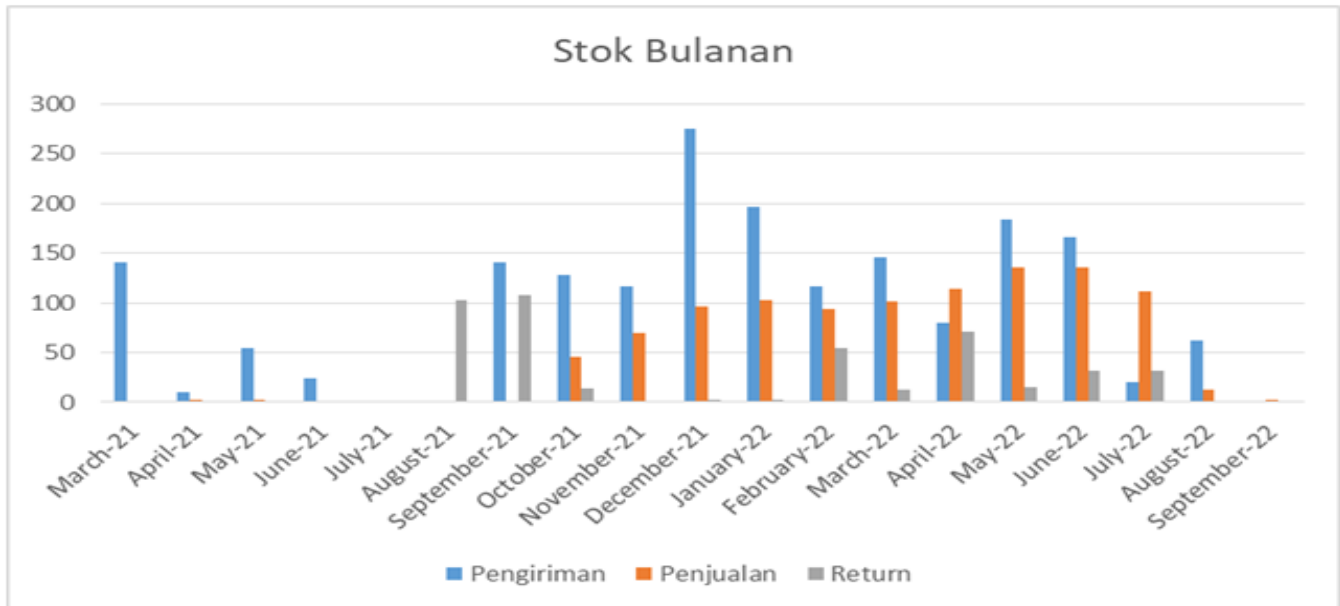


Fig 1 Monthly Stock in Modern Store
Source: PT. Indonusa Telemedia

On Figure 1 can be seen in March 2021 starting the sales period in the store, goods in that month began to be shipped to the store. Until August 2021, sales have not increased, so in August 2021, many STBs were asked to be withdrawn because there were too many stocks in stores and had not moved for a long time. In September 2021, although many STBs were withdrawn, seeing the development of visitors to the store, PT. Indonusa Telemedia made the return shipment. Sales began to increase, but when viewed from the existing graph, it can be seen that the company has not been optimal in shipping goods.

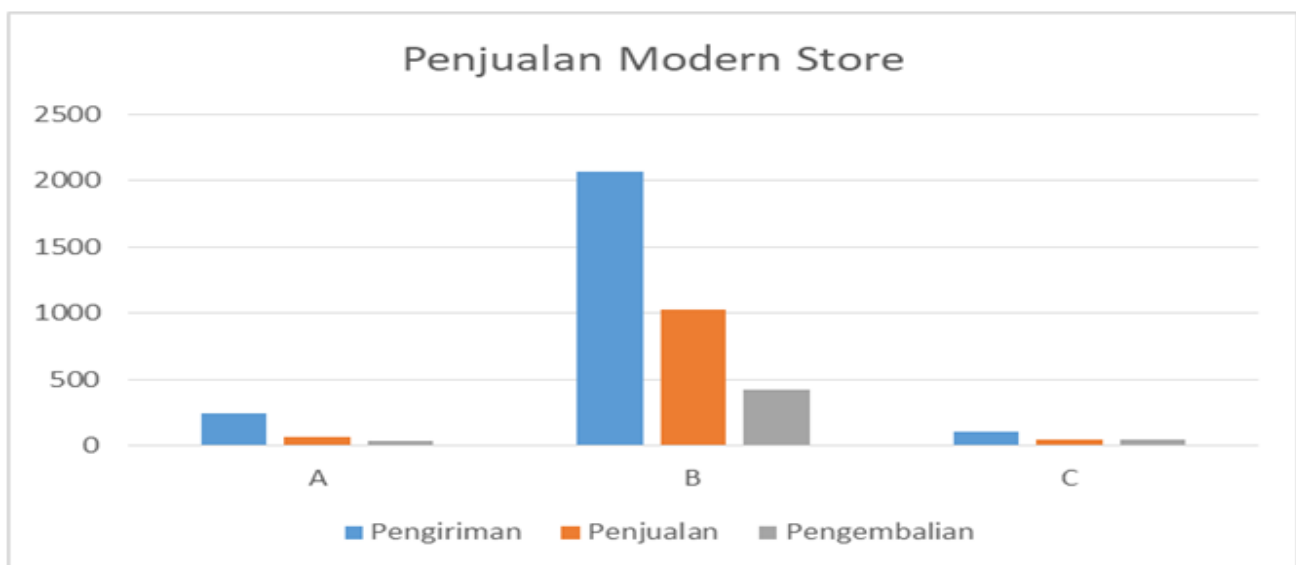


Fig 2 Shipping, Sales, and Return Data at Modern Store
Source: PT. Indonusa Telemedia

In Figure 2 there are 3 types of set-top box products sold at the store. On the chart can be seen the 3 products, where both sales, shipping, and return of these products are very different, it can be seen from product B that the goods sold are still quite far from the goods that have been sent to the store. In the end, many STBs were returned, because there were still quite a lot of stocks. In addition, there are also stores that are out of stock so that they temporarily take stock at the nearest store. This problem resulted in many stores experiencing stock buildup. This excess inventory results in capital investment which is also related to the non-optimal

costs that will be incurred by the company. Therefore, accuracy is needed in controlling the STB stock inventory. This is so that inventory control can balance the procurement of inventory quantities with inventory costs. So that the cost of these supplies can be reduced to a minimum. Because in recent years there have been many kinds of Smart TVs, which can allow people to watch some of the desired shows through applications that can be used on the Smart TV without the need for STB again, so sales may not be as good as when STB is being sought by the public.

This study aims to control Set Top Box inventory on sales at Modern Store, so that the inventory of goods in each store does not occur shortage and excess. In this problem, we will use the Economic Order Quantity (EOQ) approach in accordance with existing theory, where this inventory model has important things on when to place an order and also how many items must be ordered.

II. METHOD

➤ *Research Design*

Research design is a phase or description that will be implemented during the research process to assist the compiler. The approach (method) used in this study is quantitative descriptive. The following are the stages of research that will be carried out by the compiler in the research process:

- Conduct a literature study of the concept used, namely the EOQ method.
- Determine the need for data to be used.
- Collect data needed in research.
- Research Data.
- Research data will be processed using the EOQ method.
- Comparison of the results of research that has been done by the company and also the results using the EOQ method.
- Drawing conclusions.

➤ *Population and Sample*

Population is an area that generally consists of objects / subjects with a certain number and characteristics that are studied by researchers to then draw conclusions (Sugiyono, 2018: 126).

The sample is part of the population that is studied to draw conclusions that can be generalized to the population of interest (Uma Sekaran et. al., 2019: 54).

In this study, the population used was all STBs sent by PT. Indonusa Telemedia to stores spread across Indonesia in the sales period from March 2021 to September 2022. Using sales data samples, 3 types of STBs using ABC Analysis are classified into category A, namely STB XSTREAM SERU 8GB as many as 710 units, category B namely STB XSTREAM SERU 16GB as many as 310 units, and category C, namely STB XSTREAM GEN 2 as many as 9 units. Sample analysis of 1 product using the EOQ method.

The method used in population sampling is Nonprobability Sampling. The 2 techniques used are the Convenience sampling and Judgement sampling methods. In taking 3 product samples from the large population of existing products using Convenience Sampling, samples were taken from populations that in recent years sales were quite high. Furthermore, sampling 1 product using the Judgement Sampling method, this sampling is based on the ABC analysis classification.

➤ *Data Collection Methods*

Based on the source of data collection can come from (Sugiyono, 2018,194):

- Primary source, data obtained directly from the data source.
- Secondary source, data obtained indirectly from the data source

In this study, the type of data used is from secondary data which is internal data from PT, Indonusa Telemedia, sending STB goods at Modern Store for the period March 2021 to September 2022 which has been carried out.

The design of the data collection technique is probability sampling based on certain considerations, due to secondary data obtained from certain people only (Sekaran et al., 2019, 70-71).

This study used data collection techniques through:

- Literature research was obtained from international and national journals in previous studies..
- Research conducted on secondary data which is internal data on shipping, sales, and returns of Set-top boxes from March 2021 to September 2022.

➤ *Data Analysis Methods*

To obtain data that can be processed to calculate Economic Order Quantity, Reorder Point, and Safety Stock, it is necessary to plot data from the history of shipments, sales, and returns. The data used is transaction data for the period 1 March 2021 – 30 September 2022 in accordance with internal agreements. From this history, it can be previously classified what items are in the store.

From the items in the store, ABC analysis was carried out to get the categories of these items. This thesis uses category A as a sample of this study. ABC Analysis calculations are used as follows:

$$ABC = \text{Cost per unit} \times \text{qty of goods shipping each sample of goods.}$$

From this calculation, it will be obtained what percentage of the classification of goods with total inventory in accordance with the existing qty.

After conducting ABC analysis, the calculation of the EOQ method is carried out by entering existing parameters. This parameter is obtained from monthly stock data on shipments, sales, and returns. From this data, numbers are obtained which are then entered into POM QM. However, the calculation of EOQ itself is as follows:

- Variable:
 - ✓ Q*: Economic Order Quantity (EOQ)
 - ✓ D: Number of Unit Requests on inventory items
 - ✓ S: Booking fee on each booking
 - ✓ H: Storage cost on each unit

EOQ formula:

$$Q^* = \sqrt{\frac{2 DS}{H}}$$

Followed by the calculation of Reorder Point:

faReorder Point Formula:

$$ROP = d \times L$$

The last is the calculation on Safety Stock:

$$\text{Safety Stock} = \text{Standard Deviation} \times \text{Usage Time (Months)}$$

III. DISCUSSION

➤ Overview of the Location or Object of Research

- *Company History*

PT. Indonusa Telemedia, commonly known as Transvision, is a company previously known as TelkomVision, a company engaged in subscription television services. TelkomVision is no longer part of Telkom, in 2013 Trans Corp bought 80% of the shares. And in 2014 TelkomVision changed its name to TRANSVISION. Where Trans Corp focuses on content development while Telkom focuses on its infrastructure.

- *Scope and Field of Business*

The main products that form the core of this company are Subscription TV channels (Example: Local channel, HBO, Bein, etc.). At first, TRANSVISION only sold subscription television channel services through a satellite dish attached to the Decoder so that it could be enjoyed to the TV on the subscriber. Along with the development of technology and highly competitive market competition. Transvision now also provides services on STB Android boxes and OTT services. So that customers now do not need to install a satellite dish again. Because the use of this satellite dish can be anywhere, TRANSVISION has branches in almost every city in Indonesia. So that with the existence of branches in almost every city of Indonesia. TRANSVISION also sells some of its newest products (Set Top Box) to several cities that already have TRANSVISION branches.

- *Company Business Challenges*

The rapid development of technology changes the behavior of people, who usually watch TV more often, now more often to play their gadgets. But today's society also needs a large enough screen to watch content on their cellphones. And also people may also all want to buy a new TV. So that it is given an additional alternative Set Top Box device installed on any TV.

- *Sales Business Process Through Modern Store*

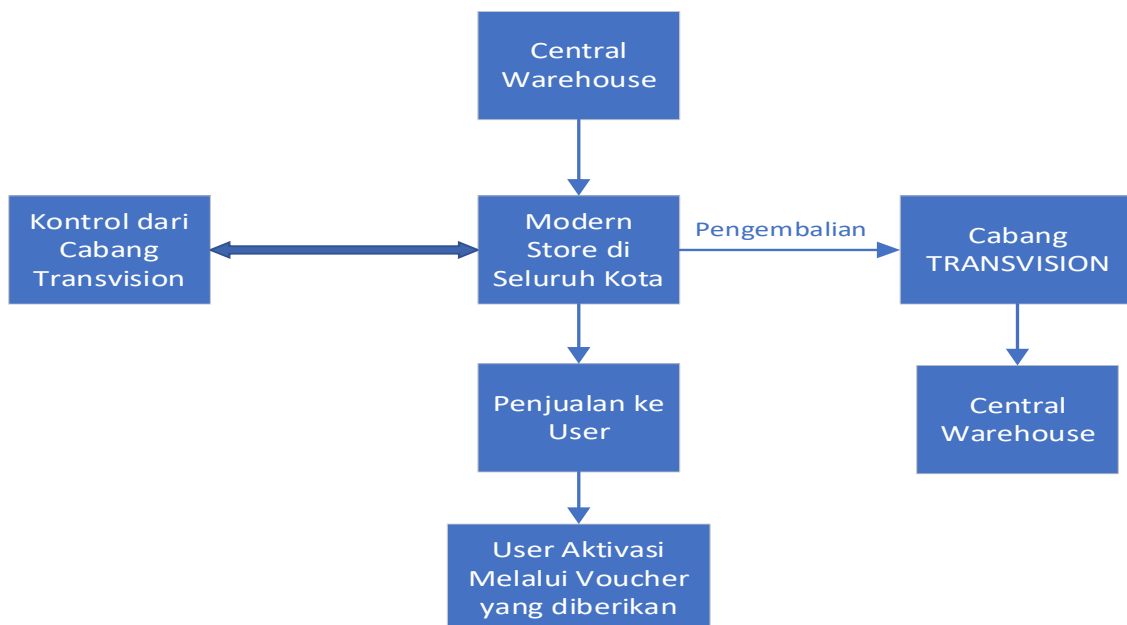


Fig 3 Inventory Stock Process at PT. Indonusa Telemedia
Source: PT. Indonusa Telemedia

In Figure 3 is the business process of shipping, returning, and selling stock. Where this business process is only specifically run for sales to this Modern Store. All stock is in Central Warehouse in Jakarta. When you get an order, this Central Warehouse will send stock on demand to the intended Modern Store. When the unit arrives at the Modern Store, it will be immediately checked accompanied by a team from PT. Indonusa Telemedia in the area. If it is appropriate,

the goods can be directly sold to the buyer. Sales are made directly in the store, and if there are direct buyers can be taken home and installed by themselves. For direct service activation through vouchers that have been affixed to the unit. If the store makes a return, the unit is sent to the nearest branch office. After being received and checked according to its physique, the unit can be sent back to the Central Warehouse.

IV. RESEARCH RESULTS

➤ *Products of PT. Indonusa Telemedia*

On sale at this Modern Store PT. Indonusa Telemedia sells 3 types of products at different prices. So that these 3 types of products became the population in this study. For products and prices as follows:

Table 1 Products from PT. Indonusa Telemedia

PRODUK	STB XSTREAM GEN 2	STB XSTREAM SERU 8GB	STB XSTREAM SERU 16GB
HARGA	Rp899.000,00	Rp319.000,00	Rp399.000,00

Source: Data from PT. Indonusa Telemedia

Table 1 represents the types of products and prices of the three types of products sold by PT. Indonusa Telemedia through Modern Store. From Table 1 this will be the classification data in ABC Analysis.

➤ *Delivery of Set Top Box to Modern Store*

In sales through modern stores, shipments are made to several stores that have electronic segments. Because the company wants good sales and a large amount. Deliveries are

made based on the analysis of customers in the city who have not used inventory management theory.

Companies always want stock that is always there and also not short of stock when sales increase. Because if there is a shortage of stock, it requires delivery time, which causes consumers not to buy. The following is the delivery of Set Top Box that has been done from TRANSVISION to Modern Store.

Table 2 Delivery of Set Top Box to Modern Store in Sales Period

Bulan	SET TOP BOX			Total
	STB XSTREAM GEN 2	STB XSTREAM SERU 8GB	STB XSTREAM SERU 16GB	
Maret 2021	140			140
April 2021	10			10
Mei 2021	54			54
Juni 2021	24			24
September 2021		140		140
Oktober 2021		7	121	128
November 2021			116	116
Desember 2021		273	2	275
Januari 2022		75	122	197
Februari 2022		58	58	116
Maret 2022		105	41	146
April 2022		80		80
Mei 2022		184		184
Juni 2022		166		166
Juli 2022		20		20
Agustus 2022		62		62
Total	228	1170	460	1858

Source: Data from PT. Indonusa Telemedia

Table 2 shows that the study used 3 Set Top Boxes sold in Modern Store. Deliveries are made from March 2021 to August 2022. This delivery is made to all modern store locations with different amounts for each store. Seen in the picture of the most shipments, namely the Xstream Seru 8GB Set Top Box. This is because this Set Top Box is more in demand by the public with a fairly affordable price. From this delivery figure is the population figure in this study. It can then be classified in ABC Analysis.

➤ *Sales of Set Top Box at Modern Store*

Current technological advancements that make many prefer mobile phones to be used for watching, causing a decline in sales of this Set Top Box. And also today many electronics manufacturers are starting to produce Smart TVs at affordable prices. However, this Set Top Box is a suitable alternative because many people also do not want to replace their old TV. The following is TRANSVISION's sales data through modern stores.

Table 3 Sales of Set Top Box in Modern Store in Sales Period

Bulan	SET TOP BOX			Total
	STB XSTREAM GEN 2	STB XSTREAM SERU 8GB	STB XSTREAM SERU 16GB	
April 2021	3			3
August 2021	1			1
December 2021		38	58	96
July 2021	1			1
June 2021	1			1
May 2021	3			3
November 2021		31	39	70
October 2021		35	10	45
September 2021		1		1
April 2022		83	31	114
August 2022		11	1	12
February 2022		64	30	94
January 2022		61	41	102
July 2022		92	19	111
June 2022		111	25	136
March 2022		64	37	101
May 2022		118	17	135
September 2022		1	2	3
Total	9	710	310	1029

Source: Data from PT. Indonusa Telemedia

Table 3 is the result of this sale is the sales of all Modern Store stores, starting from March 2021 to September 2022, but only starting to sell in April 2021. From the results of this sale, it can be seen that the stock of set top boxes is still quite a lot. So it is necessary to apply economic order quantity. Because the remaining stock is still quite a lot, there are goods that are returned and cause company losses.

➤ *Return of Set Top Box to TRANSVISION*

The remaining stock in some modern stores must be returned because many have not moved for quite a long time, stores also choose to be returned because there can be loss, and others. From here the theory of safety stock needs to be applied, so that the stock does not accumulate too much in the store. The following is the return of set top box devices from the modern store to TRANSVISION.

Table 4 Return of Set Top Box in Modern Store in Sales Period

Bulan	SET TOP BOX			Total
	STB XSTREAM GEN 2	STB XSTREAM SERU 8GB	STB XSTREAM SERU 16GB	
August 2021	103			103
September 2021	102			102
October 2021	14			14
December 2021			3	3
January 2022		2		2
February 2022		21	6	27
March 2022		10	2	12
April 2022		5		5
May 2022		3		3
Total	219	41	11	271

Source: Data from PT. Indonusa Telemedia

Table 4 is the result of returns made by Modern Store stores to PT. Indonusa Telemedia, because there are still many stocks that have not moved. This leads to losses because shipping and return costs do not make it a profit for the company. This research is expected by the authors to reduce costs, and not make stocks that do not move long enough. Returns should also be reduced if device delivery is efficient.

• *Lead Time*

The delivery of this set top box is carried out by the expedition appointed by the company. The time required when shipping from TRANSVISION to the Modern Store location is 1-5 days. But the average Set Top Box arrives in 3 days. So that the *lead time* calculation uses 3 days.

• *Inventory Cost*

The total cost of inventory control at the company consists of ordering costs (shipping) and storage costs. Here is an explanation of the following two:

✓ *Setup/Ordering Cost*

Order cost (Shipping) is a cost incurred as a result of shipping from PT. Indonusa Telemedia to Modern Store. The total order cost is obtained by multiplying the shipping cost per order by the number of orders during the sales period. Shipping costs used by PT. Indonusa Telemedia is Rp. 5,850,000 for 1170 units with 11 deliveries.

✓ *Holding Cost*

Storage costs are costs incurred as a result of storing Set Top Box goods in modern stores. But this cost will arise if the product is sold. The fee charged by the modern store is 10% per unit sold. However, if the goods have not been sold and withdrawn, the shipping costs are again borne by PT. Indonusa Telemedia. The cost of withdrawing goods is considered a storage cost which is the company's loss.

➤ *ABC Analysis*

In accordance with the data obtained, ABC Analysis is carried out as a determination of the category of each STB. The results of ABC Analysis using POM QM are as follows:

Table 5 ABC Analysis Results on POM QM

ABC Analysis STB Solution						
Item name	Demand	Price	Dollar Volume	Percent of \$-Vol	Cumultv \$-vol %	Category
Item 2	710	319000	226490000	63,22	63,22	A
Item 3	310	399000	123690000	34,52	97,74	B
Item 1	9	899000	8091000	2,26	100	C
TOTAL	1029		358271000			

Source: Processed by Researchers Using Pom QM

In Table 5 the results of ABC Analysis get 3 ABC categories for these three STBs. In accordance with these results, researchers use category A as the basis for research to calculate EOQ. This is also in line with the company's internal which will only sell STB Xstream Seru 8GB on sales at Modern Store.

➤ *Analysis of the Total Cost of Inventory Based on What the Company Has Done*

Total cost of inventory based on what the company has done of the company during sales in modern stores is outlined in and the analysis can be seen in the following table:

Table 6 Total Inventory Cost Based on What the Company Has Done in the Sales Period

STB	Jumlah STB Dikirim	Jumlah STB Terjual	Jumlah STB Dikembalikan	Biaya Persediaan pada Periode Penjualan (Rp) a	Biaya Persediaan pada Periode Penjualan (Rp) b	Biaya Persediaan pada Periode Penjualan (Rp) c = a + b
STB XSTREAM SERU 8GB	1170	710	41	Rp 5.850.000,00	Rp 23.059.000,00	Rp 28.909.000,00

Source: Processed by Researchers

Table 6 is the calculation of total STB inventory costs in the sales period obtained from the results of total order costs added with storage costs. If on the 8GB Xstream Seru STB device, the number is 1170 pcs for order with a total ordering cost (Delivery) Rp.5,850,000. The calculation of total storage costs is obtained from the results of the amount of storage costs multiplied by the number of STBs sold multiplied by 10%, also added to the return shipping costs of returned STBs. The STB returned is the value of the company's loss.

If during the sales period of STB Xstream Seru 8GB the amount sold was 710 pcs times with a storage cost of Rp. 31,900, then the total storage cost in the sales period was Rp. 22,649,000.

The inventory cost is based on the actual company per pcs can be seen the following table:

Table 7 STB Inventory Cost Per pcs Based on what the Company has Done

STB	Biaya Pemesanan /pcs	Penyimpanan /pcs	Total biaya persediaan /pcs
STB X STREAM SERU 8GB	Rp 5.000,00	Rp 31.900,00	Rp 36.900,00

Source: Processed by Researchers

From Table 7, it can be seen that the inventory cost of STB Xstream Seru 8GB per pcs is Rp. 36,900,- or 11.5% of the price of 1 pcs of STB Xstream Seru of Rp. 319,000,-

➤ *Analysis of Optimal Order Quantity Based on EOQ Method*

In this case the product to be studied is in the form of STB Xstream Seru 8GB. Meanwhile, what is meant by Optimal Order Quantity Analysis based on the Economic

Order Quantity Method is the calculation of the optimal number of orders by means of the EOQ method.

The calculation includes the number in period of requests, the cost of ordering, as well as storage costs. If this is known, then we can calculate with the Economic Order Quantity method. The following is the Calculation Table for Optimal Set Top Box bookings:

Table 8 Calculation of STB Optimal Order Quantity using EOQ Formula in Sales Period

STB	Permintaan Pada Periode Penjualan (D)	Biaya Pemesanan Pada Periode Penjualan (S)	Biaya Pemesanan Pada Periode Penjualan (Rp) (H)	EOQ
STB X STREAM SERU 8GB	710	Rp 322.727,00	Rp 22.649.000,00	120

Source: Processed by Researchers

In Table 8, it is known that the number of STB requests in the sales period was 710 pcs with an order fee of Rp.322,727 and a storage cost of Rp.22,649,000. if the number of requests, order costs, and storage costs is known, the next step is to calculate the Economic Order Quantity with a formula according to existing theory, which is 2 times the number of requests times the order cost divided by storage costs, The result is 120. Below is an analysis of the order quantity using POM QM for windows in the sales period for STB Xstream Seru 8GB.

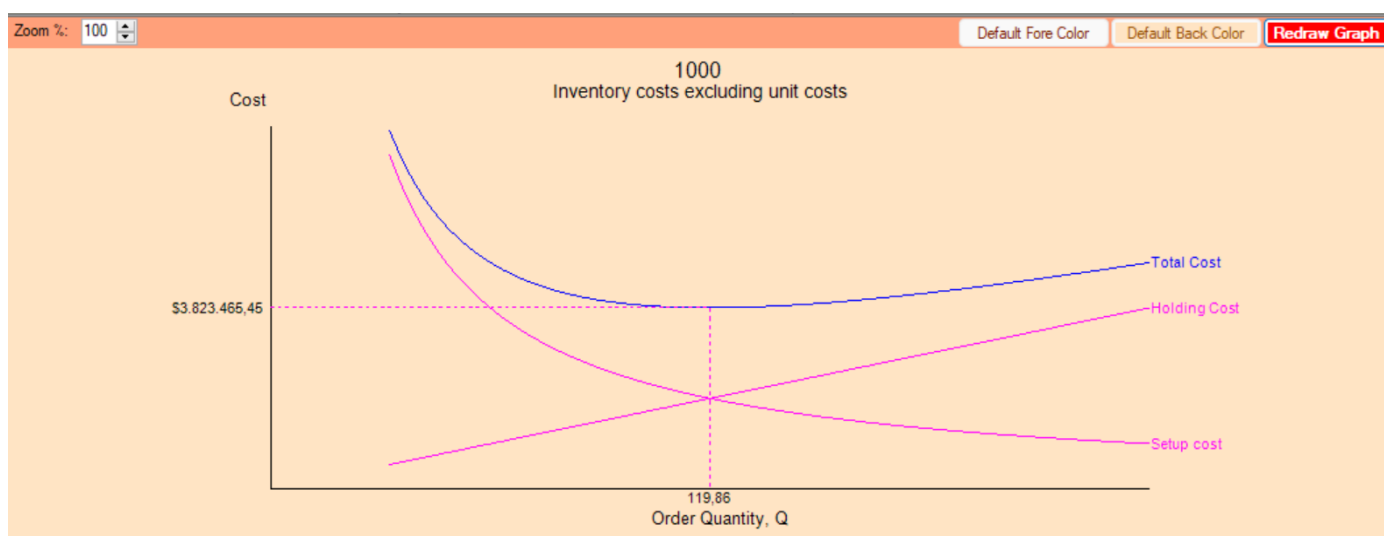


Fig 4 Analysis of Order Quantity in Sales Period Based on POM QM

Source: Processed by Researchers Using Pom QM

Figure 4 is the result of processing using POM QM. The results obtained by POM QM are in accordance with the calculation of the formula according to theory, namely the EOQ result of 120 units. With inventory costs of Rp. 3,823,465 (excluding unit costs).

➤ *Order Rate Analysis Based on Economic Order Quantity Method*

Based on the results of the EOQ calculation in the table, it is known that the optimal order quantity of Set Top Box on STB Xstream Seru 8GB is 120. Below the optimal ordering rate of the Set Top Box is presented in the following table:

Table. 9 Calculation of STB Order Rate in Sales Period

STB	Permintaan_/pcs a	EOQ (Q*)/pcs b	Rate (kali) c = a/b
STB XSTREAM SERU 8GB	710	120	6

Source: Processed by Researchers

Table 9 shows that the calculation of Set Top Box order rate based on the EOQ method is more done when compared to the order rate that has been made based on the company's actual data. Set Top Box order rates with the actual company were made 11 times in the sales period, while orders with the EOQ method were made 6 times. This means that in the sales period with a request amount of 710 pcs, the optimal number is 120 pcs for orders and the order rate of 6 times the order.

➤ *Analysis of Total Inventory Set Top Box Cost Based on EOQ Method*

While the total cost of inventory based on the EOQ method is presented in table 9:

Table 10 Total STB Inventory Cost Based on EOQ Method in Sales Period

STB	Biaya Pemesanan/Periode Penjualan (S)	Biaya Penyimpanan/Periode Penjualan (Rp) (H)	Total Biaya persediaan (Rp)
STB XSTREAM SERU 8GB	Rp 1.911.733,00	Rp 22.649.000,00	Rp 24.560.733,00

Source: Processed by Researchers

Table 10 is a calculation of inventory control using EOQ method resulting of Rp. 24,560,733, with details of order costs of Rp. 1,911,733, and storage costs of Rp. 22,649,000. These results show that EOQ can reduce inventory costs.

➤ *Reorder Point Calculation Using EOQ Method.*

The limit of the amount of inventory in the warehouse when the order must be held again is called the Reorder Point. With the Reorder Point, companies can find out when is the right time to place an order. The rebooking point can be determined by calculating the average STB sales per day during the waiting time. The calculation of reorder points based on the EOQ method is presented in table 10:

Table 11 Reoder Point Calculation Using EOQ Method

STB	Waktu Tunggu (hari) a	Rata-rata Pemakaian /hari (pcs) b	Titik Pemesanan Kembali (Pcs) c = axb
STB XSTREAM SERU 8GB	3	1,23	4

Source: Processed by Researchers

In table 11, the average usage per day is 1.23 pcs in the sales period. The figure is determined by dividing the total needs in the sales period by the number of days. In this study according to what was done on sales days for 578 days.

Thus, it can be determined that there are 4 reorder points, so that the Reorder Point is carried out so that the inventory of goods is always available for smooth sales.

➤ *Analysis Safety Stock Based on EOQ Method*

In reality, the number of Set Top Box sales is not really constant. The amount of use can increase following the development of existing technology, at that time safety supplies. This is presented in the following table:

Table. 12 Safety Inventory Calculation

STB	Standar Deviasi a	Jumlah Waktu Pemakaian (bulan) b	Safety Stock (Pcs) c = a / b
STB XSTREAM SERU 8GB	38	13	3

Source: Processed by Researchers

In Table 12, the determination of the quantity of the company's safety stock can be obtained by dividing the standard deviation divided by the amount of time used during the sales period to produce safety stock of 3.

➤ *Wetting of Research Results*

• *Comparison of Calculations Based on Actual Companies with the Economic Order Quantity Method*

On sale to Modern Store Company PT. Indonusa Telemedia sets a higher order rate of 11 times, while the EOQ method requires companies to place orders 6 times.

This is done by the company with the aim of minimizing costs on sales at this modern store, as well as ensuring that STB Xstream Seru 8GB stock is always available. For more details presented in Table 12:

Table 13 Comparison of Calculations Based on Actual Company with EOQ Method

Keterangan	Aktual Perusahaan (Pcs)	Metode EOQ (Pcs)
Jumlah Pemesanan Optimal (Pcs)	65	120
Rate Pemesanan (Kali)	11	6

Reorder Point (Pcs)		4
Safety Stock (Pcs)		3

Source: Processed by Researchers

Table 13 clearly shows that EOQ placed fewer orders, in actual only 65 units with an order rate of 11 times while EOQ showed more orders to 120 units with an order rate of 6 times. In terms of calculation, when ordering more with less rate so that the cost is lower when shipping. This makes EOQ on a qty basis more bookings but this can reduce booking costs. Storage costs have no effect because they are charged when goods are sold. It's just that with this EOQ, it is expected to minimize excess stock and also optimize the number of orders in accordance with existing demand.

Reorder point calculation is obtained 4 pcs, this is very helpful for the company in stock control. Where the company will be ready when there are only 4 units of inventory left,

immediately reordered. The stock will be ready to return so that every Modern Store store is not short of stock.

The calculation of safety stock is also carried out, this is very useful when suddenly the demand increases. When demand increases, Modern Store stores still have stock according to the calculation results obtained, which is 4 units.

• *Comparison of Total Company Actual Set Top Box Inventory Cost with EOQ Method*

Comparison of Inventory set top box cost using the eoq method will be a company evaluation whether the eoq method is effective to use. Comparison is shown in table 13:

Table 14 Comparison of Inventory Set Top Box Cost between Actual and EOQ Method

Uraian	STB Xstream Seru 8GB
I. Aktual Perusahaan	
1. Biaya Pemesanan	Rp 5.850.000,00
2. Biaya Penyimpanan	Rp 23.059.000,00
3. Biaya Persediaan (1+2)	Rp 28.909.000,00
II. Metode EOQ	
4. Biaya Pemesanan	Rp 1.911.733,00
5. Biaya Penyimpanan	Rp 22.649.000,00
6. Biaya Persediaan (4+5)	Rp 24.560.733,00
III. Selisih	
7. Biaya Pemesanan (1-4)	Rp 3.938.267,00
8. Biaya Penyimpanan (2-5)	Rp 410.000,00
9. Biaya Persediaan (3-6)	Rp 4.348.267,00

Source: Processed by Researchers

If you look at the storage costs made on the based Company has done, there is actually almost no difference. There was a difference of Rp. 410,000 due to the return of stock of goods, resulting in company losses. Return of goods is considered a storage cost.

With the use of this EOQ method, companies can get an efficiency of almost 20%.

V. CONCLUSION

From the results of research using the EOQ Method, it is concluded that:

- By calculating using the Economic Order Quantity method, there is an inventory cost saving of the Xstream Seru 8GB STB, the company gets an efficiency of 20%.
- *Reorder Point* is obtained at 4 pcs. When the stock has reached this number, the company must immediately place a reorder so that STB stock inventory is always there so as not to hamper the sales process in the store.
- *Safety Stock* is obtained as much as 3 pcs, this serves so that the amount of STB Xstream Seru 8GB inventory remains when demand increases.

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I would like to express my sincere gratitude for the hard work and outstanding dedication in the application of Economic Order Quantity (EOQ) method on inventory control of set top boxes in our company's sales. The application of the EOQ method has brought positive changes and provided significant benefits to our company's operations.

Through the application of the EOQ method, the team has managed to optimize the inventory level of set top boxes very efficiently. This step has helped us overcome complex inventory-related challenges, such as ensuring product availability for customers, reducing excessive storage costs, and improving the efficiency of the ordering process.

I would like to express special appreciation to the team involved in the process of analyzing and calculating EOQ based on historical sales data. Your collective efforts in collecting and analyzing data have enabled us to take informed and fact-based decisions.

Not only that, through ABC analysis, we can also identify set top box categories that have a strategic role in inventory. Thus, we can focus more on managing inventory for those categories and achieve higher efficiency.

The application of the EOQ method is one clear example of how important innovation and development are in improving company performance. All of you have shown tremendous commitment and professionalism in ensuring the success of this implementation.

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