Analysis of Operational Material Management Strategies to Avoid Overstock and Stockout in Packaging Inventory at Electronic Manufacturer Company

Sonya Siregar[1]*, Adhitomo Wirawan[2], Muhammad Arif[3], Aulia Fajrin[4]

[1] Business and Management Department, Politeknik Negeri Batam Batam, Indonesia
[2] Business and Management Department, Politeknik Negeri Batam Batam, Indonesia
[3] Business and Management Department, Politeknik Negeri Batam Batam, Indonesia
[4] Mechanical Engineering Department, Politeknik Negeri Batam Batam, Indonesia

Email : sonya283regar@gmail.com, adhitomo@polibatam.ac.id, arifiman0509@gmail.com, auliafajrin@polibatam.ac.id

Abstract

The manufacturing industry faces challenges in inventory, including *overstock* and material *stockouts* that require companies to use an efficient inventory strategy. The purpose of this research is to analyze the effectiveness of *the operational material management* strategy in overcoming the problem *of overstock* and *stockout* material *packaging* in the inventory process at electronic manufacturer company. This study uses a qualitative approach method by collecting data through interviews, observations, and documentation. Data analysis was carried out using *fishbone diagrams* to decipher the causative factors and *pareto diagrams* to identify the main factors. The results of *the fishbone* analysis show that data input errors, multiple division of labor, material damage during production, asynchronous communication between the teams involved, lack of supervision, and poor employee rotation are the main causes. In addition, the results of Pareto analysis with (*Pareto's law* 20-80) the main factors that dominate 80% are in human factors 31%, material 27%, and machine 22%. Based on the results of the research, simple applications can be done by improving communication coordination, increasing the number of employees, conducting regular training, and optimizing the use of technology.

Keywords: *Operational Material Management, Overstock, Stockout, Material Packaging, Fishbone Diagram, Pareto*

Introduction

Batam City is an industrial city dominated by the manufacturing industry that faces challenges in inventory management. Inventory is a systematic approach that aims to ensure that the company has the right amount and time inventory, and according to the specified specifications [1]. Inventory management is recognized as an important function of supply chain management. Inventory management is essential for the economic success of a company, as it is an essential part of a company's financial balance. Inventory management consists of several actions with the aim of verifying whether resources are being used correctly, whether they have been handled appropriately and whether they have been controlled. Inventory management consists of planning and controlling the resources acquired during the period. These resources can be materials, information, money, and customers. In addition, the purpose of inventory control is to meet consumer demand quickly so that consumer satisfaction is guaranteed, ensure continuity and smoothness of the production process, and increase revenue because the company is able to

meet sales and consumer demand because if the company experiences a stockout of material inventory, it will have an impact on the production process which causes obstacles and disappointment for consumers [2] [3] [4] . On the other hand, if the amount of *is overstock*, it will cause an increase in inventory costs, use a lot of storage space, wear out the material stored for a long period of time which of course will affect the quality of the product [5] [6] [7] . All processing companies must be concerned with inventory control, given that they perform and influence the company's results in a clear way. Inventory needs to be controlled so that there are no disruptions to the production chain and affect customer service. Poor management can result in a lack of goods needed to produce the products that customers demand and this will cause the production sector to come to a halt, consequently causing financial losses for the company. Therefore, it is important to have a harmonious coordination between demand and supply, having a complete analysis of what to buy, how much, and when to request a purchase. All this involves a thorough study so that there are no overs, shortages of stock or errors in the transformation process and the organization does not suffer losses, but rather profits, with this planning [8] [9][10][11]. The company must have a strategy to achieve the desired goals in inventory by anticipating *overstock* and *stockout*, including building proper material inventory control with minimal cost use [12] [13].

In the inventory strategy *Operational Material Management (OMM Buyer)* plays an important role in determining the optimal inventory strategy to manage material inventory, the strategy is central in optimizing inventory. Strategy is an *incremental* and continuous action, and is carried out based on the perspective of what the customer expects in the future [14][15]. The use of ERP (SAP) is one of the inventory strategies used by *OMM Buyer* at company [16]. *Enterprise Resource Planning* (ERP) is a multimodule in the form of a business packaging application that allows organizations to integrate business processes, company performance, and data distribution. The part of the ERP used by OMM   *Buyer* is *the Application and Product* (SAP) System which is used to make material calls, edit, and *generate* scheduled materials [18][19]. One of the modules used in the ERP system (SAP) is the MD04 module in which there are many features such as *coasting* 1 to see *the BU number Buyer* which is used as important information in several activities related to materials and *suppliers*[20]. In addition, *OMM Buyer* uses a material inventory strategy]ith the JIT concept [21]. *Just in Time* (JIT) is a sustainable problem-solving philosophy that supports *lean* production. *Just In Time* (JIT) is a production system where the purchase of raw materials and the manufacture of products is only done to meet customer demand [22]. *Just In Time* inventory concept helps to balance the costs incurred during the production process and streamline the total inventory costs. The implementation *of production schedules is also an important strategy that is very often implemented by* OMM Buyers [23] . Production is part of one of the business functions in a company, which is related to the change of form from input to *output* of a certain quality, so that production can be categorized as a value-added process contained in each stage of production [24][25].

| Material | Juli | | | Agustus | | | September | | | Oktober | | | November | | | Desember | | |
	Pemakaian	Pembelian	Excess/ shortage	Pemakaian	Pembelian	Excess/ shortage	Pemakaian	Pembelian	Excess/ shortage	Pemakaian	Pembelian	Excess/ shortage	Pemakaian	Pembelian	Excess/ shortage	Pemakaian	Pembelian	Excess/ shortage
300012992851	11.374	17.463	6.089	12.602	12.600	-2	7.264	6.909	-355	7.992	7.992	0	11.189	21.989	10.800	6.128	4.320	-1.808
300010754201	202.650	153.000	-49.650	320.154	301.120	-19.034	84.521	82.019	-2.502	133.896	131.896	-2.000	251.573	202.252	-49.321	136.358	101.672	-34.686
300010085393	26.400	47.307	20.907	42.903	41.803	-1.100	27.596	26.400	-1.196	55.000	55.000	0	23.164	23.164	0	36.309	36.309	0
300010082401	200.979	206.000	5.021	146.122	146.122	0	143.300	144.000	700	193500	193.500	0	195.355	203.005	7.650	207.021	198.550	-8.471
300006004105	25.600	15000	-10.600	57.012	57.512	500	31.115	31.215	100	42.000	42.020	20	21.840	21871	31	20.800	20825	25
300006646531	17.052	3.297	-13.755	57.032	27.032	-30.000	28.380	4.752	-23.628	3.997	887	-3.110	1.320	221	-1.099	18.486	3.107	-15.379
300007567923	87.906	90.902	2.996	214.356	216.772	2.416	182.520	182.937	417	152.292	148.210	-4.082	147.160	160.840	13.680	84.995	74.436	-10.559
300008105995	0	0	0	0	0	0	0	0	0	6.720	5.440	-1.280	14.400	13.155	-1.245	6.080	4.805	-1.275
300008255954	7.680	10.582	2.902	6.723	6.720	-3	28.160	28.185	25	1.600	1.600	0	2.240	2.560	320	2.881	2.561	-320
300008833211	182.648	180.000	-2.648	224.808	200.172	-24.636	180.062	148.230	-31.832	151.990	125.900	-26.090	144.224	124.562	-19.662	102.590	102.376	-214
300008896971	114.328	114.328	0	203.840	203.840	0	164.640	163.600	-1.040	326.012	326.012	0	113422	113422	0	71804	71804	0
300009185711	74.250	35.574	-38.676	68.670	94.861	26.191	67.222	58.540	-8.682	71.065	46.058	-25.007	42.839	30.751	-12.088	13.681	22.360	8.679
300009212723	111.756	140.000	28.244	240.422	240.198	-224	153.346	153.316	-30	132.436	127.276	-5.160	163.851	166.329	2.478	127.212	126.060	-1.152
300009213465	23040	42.632	19.592	97.932	99.104	1.172	59.904	59.904	0	41484	40.332	-1.152	46104	47.268	1.164	33472	33.408	-64

Figure 1: Percentage of Packaging Material Demand

Based on Figure 1 above, it shows that the demand for *packaging* materials from July-December shows fluctuating demand. The table above shows data on the use and purchase of various types of *packaging* materials over a period of 6 months, from July to December. Each material has a usage value (amount used) and purchase (amount purchased) which is then calculated the difference in *the excess* or *shortage column.* A positive value in this column indicates an excess of

stock, while a negative value indicates a stock shortage (*shortage*) which indicates a potential *stockout* in that period. The material 300010754201 is in constant shortage almost every month. In July, it was recorded that this material experienced a *stockout* of -49,650 pcs, followed by a *shortage* of -19,034 pcs in August, and continued until December. This condition shows that there is a mismatch between purchase and actual use, which risks disrupting the smooth production process. On the other hand, the material 300009213465 shows the opposite condition to the previous one, i.e. showing excess material (*overstock*) in a row. The excess was recorded at 19,592 pcs in July, 4,524 pcs in August, 4,825 pcs in September, and so on. Material usage can be seen from SAP T-Code (Coois) and material purchases can be seen from GR-an material by the *store* via ME38.

Overall, this table shows that the majority of *packaging* materials experience fluctuations between *unstable overstock* and *stockout* from month to month. This imbalance between the purchase and use of packaging materials shows a lack of accuracy in planning material needs. The ups and downs of demand will certainly involve *an Operational Material Management* (*OMM Buyer*) strategy in balancing material orders as inventory to avoid excess and understock. This not only helps to optimize the use of storage space, but also maintains material quality, meets customer needs and improves cost efficiency. Thus, this study aims to provide practical recommendations for companies in determining and finding a good strategy in overcoming the problem of *overstock* and *stockout* in packaging material inventory.

This study uses a qualitative approach of the type of case study, which is descriptively analyzed which is used to identify the causes of *overstock* and *stockout.* Case studies are one of the qualitative approaches that examine a specific case. Case study researchers can choose their research type based on their objectives, i.e. single *instrumental* case studies (which focus on one particular issue or problem). To strengthen the analysis, tools were used using *the pareto and fishbone diagram methods* [22] [26] [27]. *Pareto charts* will help in determining the main causes of the most significant problems, while *fishbone charts* will be used to outline the various factors that contribute to the issue. With this approach, it is hoped that it can gain a better understanding of the factors that affect inventory at company so that it finds ideas and solutions to avoid *overstock* and *stockout* [28].

Methods

Below is a framework of thinking that is compiled to describe the flow of research from problem identification to the steps of drawing conclusions and giving suggestions. This framework of thought is compiled as a systematic guide for researchers in carrying out the research process. Thus, the entire research stage can run in a directional manner and be in the context of a predetermined study in accordance with the qualitative approach of case studies that focus on understanding phenomena.

1 Research Location and Time

This research was carried out on one of the companies in Batam City, namely at a Electronic Manufacturer Company, Batam, Indonesia. The selection of this location is based on the problem of *overstock* and *stockout of* packaging *materials* identified from observations and literature studies related to *Operational Material Management* strategies to avoid *overstock* and *stockout* in *packaging* materials which makes it a relevant case study object. The research period lasted for 8 months starting from July 2024 to March 2025.

2 Research Objects

The object of this research is *the Operational Material Management (OMM Buyer) team* which acts as the center of the packaging material inventory process as well as *the store, planner, engineer*, and production team as other objects involved in the management of packaging material inventory at Electronic Manufacturer Company.

3 Informant or Research Subject

The main subjects in this study consist of *Operational Material Management Buyer (OMM), Planner, Engineer, Production team*, and parties involved from the *store team*. The consideration of choosing the subject of this study is because the researcher believes that it is important to understand the factors that cause *overstock* and *stockout* and it is important to understand the *Operational Material Management (OMM Buyer) strategy* in the inventory of packaging materials. The determination of informants is carried out *purposively*, namely by selecting informants based on certain criteria that are relevant to the focus of the research. The selected informants are informants who meet the criteria below:

A. Has a position as *top management* who is involved with all processes from inventory flow and use of packaging materials .
B. Have at least 3 years of work experience in related fields, namely the packaging material supply process .
C. Directly involved in the process of planning, inventorying, supervising, and using *packaging* materials in *the inventory system.*
D. Understand the operational systems used by companies such as SAP, especially in the MD04, MD07, SNC, WMS, Coois, ME38, and other modules related to inventory, movement and recording of *packaging materials*.
E. Have knowledge and experience in dealing with the problem of *overstock* and material *stockout*, so as to be able to provide relevant information about the causes, impacts, and solutions applied.

With the above criteria, an informant is expected to be able to provide valid insights in describing real conditions in the field and evaluating the effectiveness of the inventory strategy implemented by the company. The informants who meet the criteria that have direct relevance to the problem of *overstock* and *stockout* as determined through the *purposive sampling* approach include:

Table 1 Research Informants

NO	Name	Position
1	ES	*Manager Store Male Grooming*
2	RAS	*Engineer Process Male Grooming*
3	FS	*Male Grooming Production Supervisor*
4	FR	*Planner Male Grooming*
5	RI	*Buyer Male Grooming*

(Source: Processed Data, 2024)

4 Data Collection Techniques

Data was collected using a qualitative approach with the following techniques [29]:
A. Interviews: Interviews are conducted in a structured and semi-structured manner with informants to obtain detailed information about policies, procedures, challenges, and solutions related to packaging material inventory.
B. Observation: Observations are carried out directly in the warehouse area and production area to observe material flows, storage conditions, and inventory management practices applied.
C. Documentation Study: Secondary data collection in the form of internal company documents such as inventory reports, historical *overstock* and *stockout* data, *inventory management policies*, production reports, and *demand forecasting*.

5 Data Analysis Techniques

The data analysis technique used is to use *Fishbone diagram* analysis to analyze the dominant causative factors and formulate them on a *pareto diagram* [30].
A. Fishbone Diagram
B. Diagram Pareto
C. Conclusion Drawn: Conclusion is drawn based on the data that has been presented.

Results and Discussion

1. Type of packaging material used

Material *packaging* has several types according to the parent *project* that is carried out. Holding *Project* in the inventory is divided into 3 parts, namely *Grooming, Shaving* and *One blade.* Different *project* certainly have a need *packaging* which are also different in terms of color, shape, and material. It is therefore important for *OMM Buyer* to tightly control material inventory optimization *packaging* well to avoid the occurrence of *overstock* and *stockouts.* Here are the types of materials *packaging* and its division in the parent *project.*

Table 2: Types of Packaging Materials

Material	Project Stage		
	Grooming	*Shaving*	*One blade*
Insert			
Fancy Box			
A- Box			
Storage Box	Not Using	Not Using	
SRP	Not Using	Not Using	
Covercard	Not Using		Not Using

Material	Project Stage		
	Grooming	*Shaving*	*One blade*
Hangtag	Not Using		
Accessory Box	Not Using	Not Using	
Tray Sleeve	Not Using	Not Using	
Box DFU	Not Using	Not Using	
Comb Box	Not Using	Not Using	
Packaging KIT		Not Using	Not Using
Online FFP		Not Using	Not Using

(Source: Processed Data, 2024)

Table 3 above explains the distribution of the types of *packaging* materials used based on the main project, pointed out that each project has specific needs for the type of packaging.

2. Aspects of Causing the Problem

Table 3: Aspects of Causing the Problem

Aspects	Condition	Impact	Solusi *to improved*
Security	Packing size exceeds the capacity of the trolley	Material damage during the handling process	Training *unloading* & applying protective materials such as the use of impact-absorbing materials such as *bubble* wrap, foam, or padded bulkheads to prevent damage.
Productivity	Untimely delivery, long unloading time	Lead time to replace damaged or out-of-stock materials	*Open Windows*, implement additional *unloading* and *delivery* times, improve communication with suppliers, and expand material storage area facilities and equipment areas.
Quality	Material damage	*Additional lead time* for replacement of damaged materials	Consistent packaging improvements (as mentioned in the Safety aspect). Provide *buffer stock*.
TBSP	Human error, lack of communication (slow response), and lack of employees	Material demand cannot be met due to long response and long unloading times affecting KPIs due to lack of employees	Employee training, Staff additions, and more precise task allocation.

(Source : Observation and Processing Data, 2024)

Table 4 above details the various aspects that cause *overstock* and *stockout* of packaging materials, along with their impact on the production process and provide solutions for future improvements.

3. Analysis of Factors Affecting *Overstock* and Stockout of Packaging Materials with *the Seven Tools Method*

This study focuses on identifying the factors that cause *overstock* and *stockouts* using the *seven tools* method which contains seven quality control instruments, including: *check sheet, histogram, scatter diagram*, stratification, *pareto diagram, control chart*, and *fishbone diagram*, aiming to systematically identify the root of the problem [31].

A. Identification Results Using Fishbone Diagram

Based on the results of interviews conducted with informants, *overstock* and *stockout* occur due to several factors such as humans, materials, machines, methods, and the environment. Each of these factors produces points consisting of *cause* and *sub cause*. The following is a description of *the causes* and *sub causes* that result in *overstock* and *stockout*.

Table 4 Causes of Overstock and Stockout

| Category	Cause	Sub-Cause
Human	1. Lack of employees and employee training	-Data input error -Multiple *(double)* division of work -Material damage during production
	2. Poor communication relationships	-Synchronous communication *of buyers, suppliers, stores, planners*
	3. Lack of process oversight	
	4. Poor employee turnover	
Material	1. Low material quality	-*Reject* material dan *additional order*
	2. Change information from the *supplier*	-*Inconsistent order quantity*, change in pack standard or *running value*
	3. Material error (*mix up*)	
	4. Lead Time of raw materials is unstable	
	5. Changes in material specifications	-Change *of change number* (CN), *bill of material* (BOM), *up digit* and *new digit* material
	6. Material damage during storage	
Machine	1. Disruption of IT systems and connections	-Operational disruption *of* SAP and SNC systems -Disruption to WMS and transport systems
	2. Damage and reject machine	
	3. No backup monitoring system	
	4. Machine breakdown and maintenance	
Method	1. Fixated on the system	-Performance metrics are irrelevant
		-Data *history* is inaccurate
		-*Quantity* tidak *balance*
	2. Lack of data analysis	-Material order inconsistency
		-No early warning system
Milieu		-Inaccurate demand forecasting
	1.*Cancel running* dan *defer running*	-Fluctuating demand (seasonality and market changes)
	2.*Phase out* material	-Obsolete materials due to lack of *demand*
		-*Slow moving* dan *non moving*
	3. Weather, disasters and road conditions	
	4.Purchase policy changes	
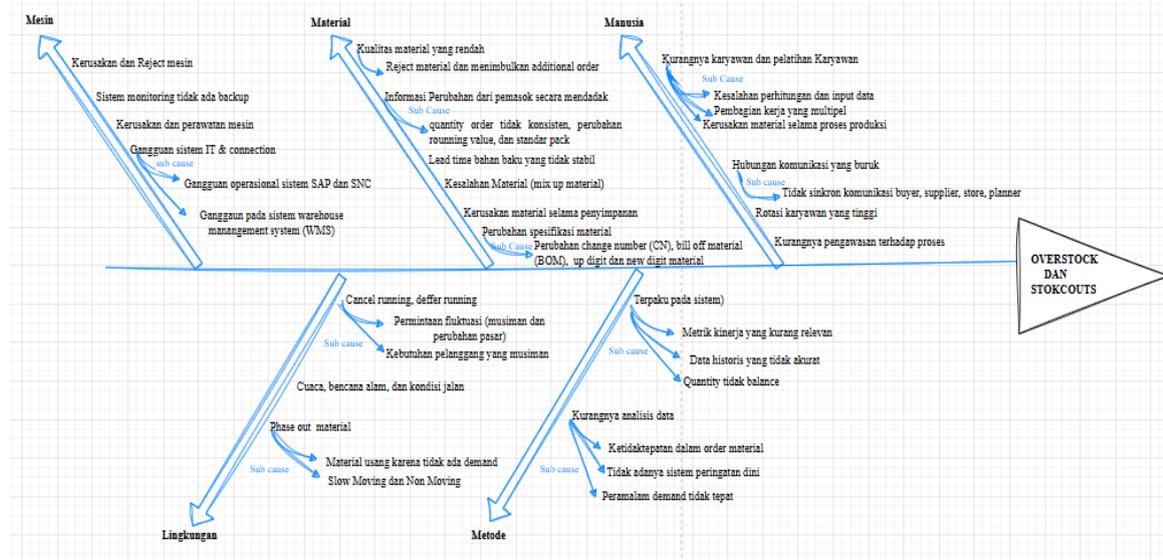
Figure 2 Fishbone Overstock and Stockout Material Packaging Diagram

Figure 2 above is a visualization of the Fishbone diagram that maps the main factors that cause *overstock* and *stockout* based on five categories: human, material, machine, method, and environment

B. Identification Results Using Overstock and Stockout Pareto Charts

Table 5 Categories and frequency of factors causing overstock and stockout

Category	Factor *sub-cause*	Frequency
Human	Data input errors	7
	Multiple *(double)* division of work	4
	Material damage during production	7
	Out of sync communication *buyer*, *supplier*, *store, planner*	6
	Lack of process oversight	3
	Poor employee turnover	4
Material	*Reject* material dan *additional order*	6
	Inconsistent order quantity, change in pack standard or *running value*	4
	Material error (*mix up*)	3
	Lead Time of unstable raw materials	3
	Change *of change number* (CN), *bill of material* (BOM), *up digit* and *new digit* material	7
	Material damage during storage	4
Machine	Operational disruption of SAP and SNC systems	7
	Disruption to WMS systems and transport	3
	Engine breakdown and *reject*	5
	Monitoring system no backups	4
	Breakdown and maintenance of the machine	3

Category	Factor *sub-cause*	*Frequency*
Method	Performance metrics are irrelevant	2
	Inaccurate data *history*	2
	Quantity tidak *balance*	2
	Material *order* inconsistencies	2
	No early warning system	1
	Inaccurate demand forecasting	2
Milieu	Fluctuating demand (seasonal and market changes)	2
	Obsolete materials because there is no demand	3
	Slow moving dan *non moving*	2
	Weather, disasters, and road conditions	1
	Purchase policy changes	1
Total		100

The table above shows the categories of sources that cause problems based on 4M+1E, namely: Human factors, materials, machines, methods, and the environment. Frequency is the number of events identified in each category, which include 31 events caused by human factors, 27 events caused by material factors, 22 caused by mechanical factors, 11 events caused by method factors, and 9 events caused by environmental factors. The calculation of the frequency of each category is divided by the total frequency (100), then multiplied by 100.

Formula: $$\text{Percentage} = \frac{\text{Frequency Categories}}{\text{Total Frequency}} \times 100$$

Percentage accumulation from top to bottom shows the total percentage if categories are collected sequentially. Human factors are the dominant cause (31%) followed by the dominant factors of material factors (27%) and mechanical factors (22%). All causative factors from the dominant to the least affect the occurrence of *overstocks* and *stockouts* are analyzed through *a pareto chart*.
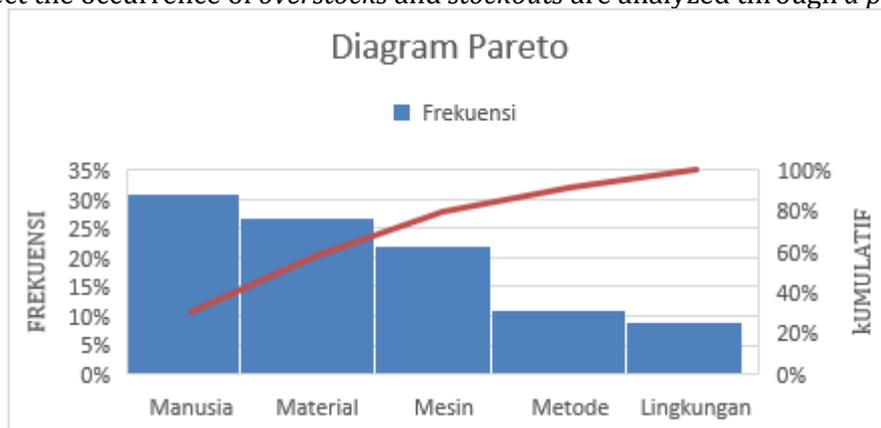

Figure 3 Diagram Pareto

It can be seen from the results in table 4 above that the causes of *overstock* and *stockout* consist of 5 causative factors, namely humans, materials, machines, methods, and the environment. Each of the above factors has its own parts in influencing the occurrence of *overstock* and *stockout*. The section has a large degree of influence depending on how often the event occurs. *This pareto chart* identifies the factors causing the problem based on the causal category from the highest to the

lowest frequency. Each blue bar shows *the percentage of the* frequency of the cause, while the red line shows *the cumulative percentage* based on the 80/20 *principle (Pareto principle).*
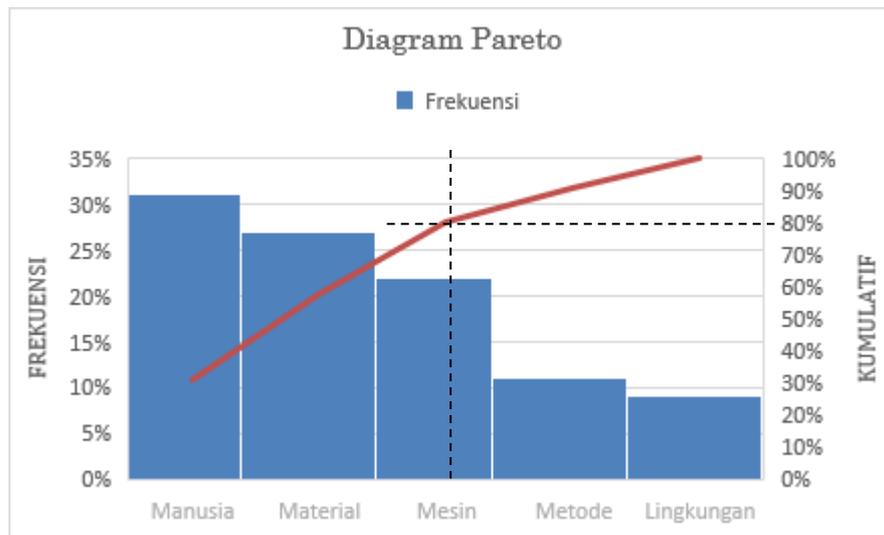

Figure 4 Pareto's 'Law' Straight Pull Curve

From *the cumulative percentage*, a straight line is drawn, which is at a cumulative of 80% until it cuts the curve line. The intersection point is pulled down, namely towards the frequency. From this, it can be seen that the factors in the category that are dominant or included in the concept *of Pareto's Law* 20-80, namely whose values are included in the cumulative 80%, include human factors, material factors, and mechanical factors with the cumulative below:

Table 6 Table of the dominant total causative factors

Overstock dan stockout	
Human Factors	31 %
Material factor	27 %
Machine Factor	22 %
Total	80 %

4. Incompatibility Between Purchase and User

From the observation results in Table 2, there is an imbalance between the number of purchases and the amount of material used in actuality. This shows the weakness of the material planning process *packaging* through *material requirement planning* (MRP) that should be able to anticipate the needs of *real-time*. This discrepancy causes two conditions of material problems, namely excess stock (*overstock*) and stock shortages (*stockout*). This problem can result in companies incurring high storage costs, the risk of material obsolescence, and inefficient use of space capacity *Store.* In addition, the conditions due to these problems cause production delays, decreased productivity, and the risk of failure to meet market demand.

5. Identifying Problems Through *Fishbone Diagrams*

Fishbone Diagram in (Figure 3) outlines the five main causal sources based on the 4M+1E approach. From the human category, it was found that data input errors and lack of training were significant contributing factors. In addition, asynchronous communication between teams (*buyer, planner, store*production *supplier*) resulting in delays in orders and unrecorded usage.

From the material factor, there is a change in material specifications (*change number* or *bill of material)* and low quality can lead to *Rejection* material thus creating additional demand *(additional order).* Meanwhile, in the engine factor, SAP system failure, SNC, and absence of *Backup*The monitoring system worsens the provision of data on actual stock needs. Method factors such as system dependency without manual validation and inaccurate forecasting also affect as well as environmental factors (such as weather, road conditions, and seasonal changes in demand) worsening stock dynamics, especially in materials *slow moving* and *non-moving.*

6. Improvement Priorities Based on *Pareto Analysis Diagram*

Based on the results of Table 6, it is known that 80% of problems come from three dominant factors: human (31%), material (27%), and machine (22%). This shows *Urgency of intervention* strategic against these three factors:

1. Human Factor (31%): Suggested solutions include ongoing training, employee addition, providing SOPs for data filling, and a multi-level system for information validation and communication.
2. Material Factors (27%): Suggested solutions include evaluating suppliers for material quality, creating more accurate and permanent standardization of material specifications, providing a more stringent quality control system and detecting *rejections* as early as possible.
3. Machine Factor (22%): Scheduling routine *maintenance*, providing information system backups, and improving the stability of inventory system infrastructure such as SAP and SNC to avoid system downtime that triggers delays in the process of material input needed.

The discussion presented in this study is strengthened by the findings of several previous studies. Among them, the results of the analysis showing that human, material, and machine factors are the main causes of *overstock* and *stockout* are in line with the findings of Rachmawati & Lentari, which states that human error, material quality, and production process incompatibility can cause inventory imbalances. Research by Mweshi also emphasizes the importance of maintaining stock balance so that losses do not occur due to storage costs and customer dissatisfaction [9]. Therefore, the results of this study not only provide new empirical data from a case study at Electronic Manufacturer Company, but also reinforces previous theories and findings in inventory management. Another finding that is aligned is the findings of Trapero [3], which emphasize the importance of inventory control to avoid overstock and understock. In addition, the SAP-based and *Just in Time OMM strategy* implemented at company is supported by the results of research by Andika [18] and Pradana [22], who stated that the use of ERP and JIT systems is able to improve logistics efficiency and inventory performance.

Conclusion

Based on the analysis using *fishbone diagrams,* the factors that cause *overstock* and *stockout* on the frequency of occurrence that have a dominant or large volume, namely in the human factor, *overstock* and *stockout* occur due to data input errors that can cause excess or shortage in ordering materials. In addition*, multiple (double) division of labor* , material damage during production, asynchronous communication between *buyers*, *suppliers*, *stores*, *planners*. Lack of process oversight and poor employee turnover. Based on the analysis using *the Pareto diagram* method, the factors that have a dominant volume or frequency with an influence of 31% are human factors whose causes are data input errors, multiple division of labor, material damage during production, poor communication, lack of supervision, and poor employee rotation. In addition, there are material factors that affect as much as 27% which are caused by *material rejection* and *additional orders,* inconsistent quantity, *material mix up*, raw material *lead time*, changes in specifications, and material damage during storage. As well as engine factors that have an influence of 22% which are caused by operational disruptions of SAP and SNC systems, disruptions to WMS, *reject* machines and their maintenance, and monitoring systems that have no *back up.* For further research, it is recommended to expand the scope to several companies with some types of materials as well. In addition, further research is recommended to use a quantitative approach to

measure the effectiveness of the OMM *Buyer* strategy numerically and add the OMM *Buyer* strategy to *the Key Performance Indicators* (KPIs) of production and customer satisfaction in order to provide more *comprehensive* recommendations. This research has succeeded in answering all the formulations of the problems formulated, starting from the identification of inventory strategies, the analysis of the causes of *overstock* and *stockout*, to the strategies applied by OMM *Buyer* in the management of *packaging* materials. However, this study has limitations, namely that it only focuses on one company and a specific type of material (*packaging*) so that the results cannot necessarily be generalized to other companies or different types of materials. In addition, the data collected by the researcher is qualitative and depends on interviews and documentation so that it can contain bias from informants. *The implications* of this study can be used as a practical guideline for OMM *Buyers* in preparing needs planning and stock monitoring.

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