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Assignment Coversheet

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Subject Code: *(e.g. XCAT1234)* **XBIS Enterprise System**	**Subject Name** *(e.g. Fundamentals of Computing)***:** **Enterprise System**

Course *(e.g. Bachelor in Computing)* : **Bachelor of Information System (Hons) Enterprise Information Systems**

Lecturer Name: **Cindy De Vosse**

Assessment Due Date: *(dd/mm/yy)*	**9-11-2022**	**Assessment Title:**	**Assignment**

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- *This assignment or parts of it has not previously been submitted for assessment in this or any other subject.*
- *I/We allow the assessor of this assignment to test any work submitted by me/us, using text comparison software for plagiarism.* **(For more information, Please read the Academic Integrity Guidelines)**

Name : Goo Han Cong **Student ID: 0133677** **Email : hancongg@gmail.com** **Mobile No: 011-18668016 Signature:** *Goo* **Date: 9-11-2022**	**Name :** **Student ID:** **Email :** **Mobile No: Signature:** **Date:**	**Name :** **Student ID:** **Email :** **Mobile No: Signature:** **Date:**
Name : **Student ID:** **Email :** **Mobile No: Signature:** **Date:**	**Name :** **Student ID:** **Email :** **Mobile No: Signature:** **Date:**	**Name :** **Student ID:** **Email :** **Mobile No: Signature:** **Date:**

For office use only – Lecturer comments (if applicable)	**Marks Breakdown**

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1.0 INTRODUCTION

1.1 INTRODUCTION TO DEE SENG FASHION TRADING SDN BHD

Image 1. DEES Logo (mydees, n.d.)

Dee Seng Fashion Trading Sdn Bhd (DEES) is a Malaysia business which has 25 stores, 1 manufacturer and warehouse around the whole Malaysia (My Dees, n.d.). So, DEES is a fashion trading business which produces its own brand apparel. Then, the stores are direct sale stores although they have their own manager to manage each store. This module will discuss the analysation of its resources allocation process and how the ERP system can improve the allocation of their inventory.

2.0 IMPLEMENTATION OF ERP SYSTEM RELATED WORKS

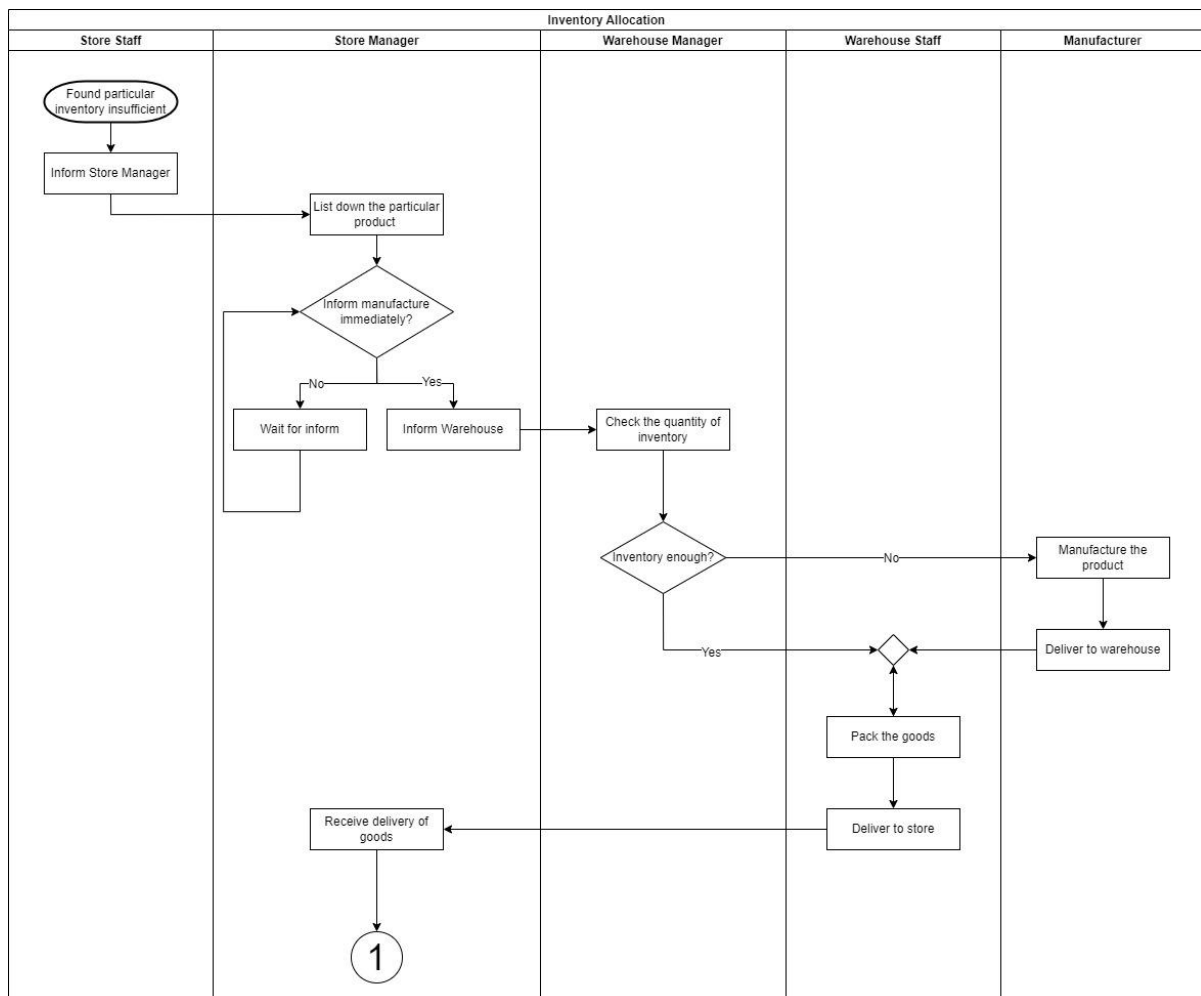## 2.1 CURRENT INVENTORY ALLOCATION PROCESS

Diagram 1. Flowchart of DEES Existing Resources Allocation Process

This flowchart demonstrates the existing inventory allocation process of DEES. It involves few characters in this process. Once the staffs find that they are running low on stock then they will record the current quantity of inventory and inform their following manager. The manager will decide whether to inform the warehouse manager about the replenishment of stocks. The reason they sometimes wait for reporting the warehouse is due to If the warehouse has enough supplies, they will prepare them and deliver to that particular store. Finally, the store will receive the supply of that product. However, if the warehouse also lacks the stock, it will inform manufacturer to produce it as replenishment. Then, the manufacturer will send it to the warehouse, the warehouse will deliver it to the store.

2.2 BUSINESS PROCESSES ANALYSIS

2.2.1 DMAIC Methodology

The existing process that the flowchart displayed can make sure the business runs smoothly as DEES uses this system to run their business for almost 20 years. However, the productivity and efficiency of the process they have used currently is gradually reduced when the scale of DEES also gradually grows. Using the Six Sigma DMAIC methodology to analyse their inventory allocation process could find the reason for inefficiency and ineffectiveness (Six Sigma Fundamentals: What is DMAIC? 2020). It may be due to there being are many processes that needed manual operation. For example, they need frequent communication between managers and staff in these processes. It significantly lacks a systematic system to ensure the information is "integrity", no one can make sure the data of the quantity of inventory is always correct as the information may occur errors in the process of communication. In a nutshell, DEES is lacking a system that enables all of the stores can automate communication and integrate the information into a single system (Enterprise Resource Planning (ERP): Meaning, Components, and Exampes, 2022).

After the first step of defining the problem and the goal of BPA, IBM stated that they could measure the KPI of their process but the quality, productivity, profitability and value indicators etc are the factors that will affect the KPI (2021). In this point, the effectiveness and efficiency of inventory allocation seriously affect the KPI. For example, the store may take more than 1 week to replenish the stock once the warehouse is also running out the stock. Within this period, the store will lose the customers and customers may not be satisfied with the inefficiency of DEES. The third process of BPA is analysis, they can apply a few methodologies to finish it such as value analysis, gap analysis etc (Staff, 2021). After this process, they will be able to understand the exact or potential reasons that make the inventory allocation inefficiency.

The last two processes are improvement and control. It means that DEES has to improve and control its business process. The problems of DEES as mentioned before can be well solved through ERP. ERP is a system which can integrate information across 25 stores, warehouse, and manufacturer into a single system. As a result, they can improve the efficiency of particular processes, reduce cost, increase revenue and drive the business to the trend of zero inventory system. At this point, DEES needs to change their business process to meet the requirements of ERP system since ERP can force the business process to improve all the time. So, ERP makes DEES has a system which can eliminate the redundant manual processes of communication among

stores, warehouse and the manufacturer. This is due to the system being able to provide them with a convenient function like each unit can update their inventory information onto that single system. Therefore, each unit can automatically update their status at any time. In this way, the manufacturer can manufacture suitable apparel products on the time by following the status of each store and the warehouse. From this perspective, ERP improves the decision-making of DEES since the manufacturer can produce the clothes in advance rather than producing when the particular product is running down.

2.2.2 Changes of Inventory Allocation Process

In order to improve the business process, DEES has to change the current business process to match the ERP system. The new process is the store staff still needs to check the inventory regularly but they will input the data into the system. Then, the data could be seen by other stores, manufacturer and warehouse. If the stock is running low, the system will inform warehouse automatically to deliver the goods. Once warehouse is also lacking a particular stock, the manufacturer can produce it and produce those popular products. This system roughly looks like same as the before, but it reduces the chance of occurrence of information errors since it automatises the process among each unit. Most important, the ERP will increase customer satisfaction and increase profitability directly as it decreases the chance of storing out of stocks. Besides that, the staff and manager will be able to focus on the other aspects or processes in terms of automation of inventory allocation.

3.0 BUSINESS CONTINUITY PLAN

Besides the improvement of business processes, the continuity plan of DEES is also important as well. Business Continuity Plan also known as BCP, Kenton stated that BCP is the system of prevention and recovery from potential threats of the company (2022). According to the resources allocating process of DEES, there are some threats and disasters that might be met by them, which are flood, inundation and traffic accidents. The former is a natural disaster whereas the latter is a man-made disaster. The only thing they have in common is they will bring the loss and harm to the daily operation of business. In this situation, DEES should consider the BCP in their operation and document the exact BCP documentation. There are some processes and actions needed by DEES, they are risk analysis, impact analysis, disaster recovery plan and training their employees. The document of BCP by the following:

3.1 RISK ANALYSIS

Risk analysis is used to analyse the probability, magnitude, duration and risk priority of related risks and threats.

Risks and Threats	*Probability*	*Magnitude*	*Duration*	*Risk Priority*	*Remarks*
Flood and Inundation	☐ Highly Likely ☒ Likely ☐ Possible ☐Unlikely	☐ Negligible ☐ Critical ☒ Limited ☒ Catastrophic	☐ < 3hrs ☒ 3 – 6 hrs ☒ 6 – 12 hrs ☐ 12+hrs	☐ Low ☒ Medium ☒ High	Depends on the geographic location of stores, manufacturer, and warehouse
Traffic accident	☐ Highly Likely ☒ Likely ☐ Possible ☐Unlikely	☐ Negligible ☐ Critical ☒ Limited ☐ Catastrophic	☐ < 3hrs ☒ 3 – 6 hrs ☐ 6 – 12 hrs ☐ 12+hrs	☒ Low ☐ Medium ☐ High	Depends on situation of accident

3.2 BUSINESS IMPACT ANALYSIS

Business impact analysis could analyse the relevant risk which bring what loss and how will it impact to the business.

3.2.1 Flood and Inundation

Business Impact Analysis			
Critical Business Activity:	Inventory Allocation		
Description of Business Activity:	The activity for allocating the inventory among 25 stores, manufacturer and warehouse of DEES.		
Risks and Threats:	Flood and Inundation	*Priority:*	High
Impact of Loss:	It depends on the severity of floods. Manufacturer, warehouse and each store located at different states, and have different geographic locations. The severity can split into **limited, critical and catastrophic.** *Severity:* **Limited:** The stores, manufacturer or warehouse had been flooded but just brought a little loss to business. It damages some goods but not any machines or productive assets. **Critical:** The stores, manufacturer or warehouse had been flooded but it brought a lot of loss to business. It damages relatively much more goods and the machines had been damaged but still available for repairing. **Catastrophic:** The stores, manufacturer or warehouse had been flooded and it totally damaged whole stores, manufacturer or warehouse. It damaged relatively much more goods and the machines had been damaged and unavailable for repairing anymore. Most importantly, it endangers life safety. *Impact:* **Limited:** 1. The stores might be not functioned for 3-6 hours. 2. The manufacturer or warehouse can still function but lower efficiency and effectiveness. 3. Loss of customer on that day. 4. The goods loss.		

	Critical:
	1. The stores might be not functioned for 1 – 3 days.
	2. The manufacturer or warehouse will also cannot function anymore.
	3. Affect to the inventory allocation.
	4. Loss the customer.
	5. The goods loss.
	6. May need to allocate human resources to clean up.
	Catastrophic:
	1. The stores, manufacturer and warehouse totally had been destroyed.
	2. Loss of the customer.
	3. Seriously affect to the inventory allocation.
	4. The goods loss.
	5. May need to allocate human resources to clean up.
	6. May endanger employees safety.

3.2.2 Traffic Accident

Business Impact Analysis			
Critical Business Activity:	Inventory Allocation		
Description of Business Activity:	The activity for allocating the inventory among 25 stores, manufacturer and warehouse of DEES.		
Risks and Threats:	Traffic Accident	*Priority:*	Medium
Impact of Loss:	1. Delay and impact the inventory allocation. 2. Endanger employees safety. 3. Loss of the customers.		

3.3 DISASTER RECOVERY PLAN

"Disaster recovery plan is a documented, structured approach that describes how an organisation can quickly resume work after an unplanned incident." (Brush, 2022). This plan can help DEES recover from the accident that will harm the business earlier.

3.3.1 Flood and Inundation

Disaster Recovery Plan			
Critical Business Activity:	Inventory Allocation		
Description of Business Activity:	The activity for allocating the inventory among 25 stores, manufacturer and warehouse of DEES.		
Risks and Threats:	Flood and Inundation	*Priority:*	High
Recovery Strategy:	**Limited** 1. If the manufacturer and warehouse suffer from flood, HQ can allocate the goods from the store that close with the store which lack of the particular product. 2. DEES could make an announcement on the social media to inform the customers that which store is suffering from flood. 3. Where possible, mitigate the loss to insurance company.		

|	**Critical**
	1. The store that will be affected by the flood should inform HQ earlier, so HQ can make arrangements of mitigating those goods to warehouse or other stores.
	2. The stores that will suffer from the flood also can use ERP system to let other stores or HQ, manufacturer, warehouse know they need help.
	3. If manufacturer suffer from flood, they should transfer the finished products to the warehouse and stores as soon as possible.
	4. If warehouse suffer from flood, they need to transfer the products to stores or third party warehouse as soon as possible.
	5. DEES should also try to find a place or have an agreement with other company which can provide the warehouse and manufacturer.
	6. Arrange technician to repair the productive assets as soon as possible.
	7. Mitigate the loss to the insurance company.
	Critical
	1. The store that will be affected by the flood should inform HQ earlier, so HQ can make arrangement of mitigating those goods to warehouse or other stores.
	2. The stores that will suffer from the flood also can use ERP system to let other stores or HQ, manufacturer, warehouse know they need help.
	3. If manufacturer suffer from flood, they should transfer the finished products to the warehouse and stores as soon as possible.
	4. If warehouse suffer from flood, they need to transfer the products to stores as soon as possible.
	5. DEES should also try to find a place or have an agreement with other company which can provide the warehouse and manufacturer.
	6. Mitigate the loss to the insurance company.
	7. Evacuate the employees from venue to make sure their safety.

3.3.2   *Traffic Accident*

Disaster Recovery Plan			
Critical Business Activity:	Inventory Allocation		
Description of Business Activity:	The activity for allocating the inventory among 25 stores, manufacturer and warehouse of DEES.		
Risks and Threats:	Traffic Accident	*Priority:*	Medium
Recovery Strategy:	1. Mitigate the loss to the insurance company. 2. Arrange the other lorry to retransfer the resources. 3. If possible, mitigate goods from the store that close with the store which lack of the particular product.		

In addition to document their plan, strategy and so on as mentioned above, DEES also necessarily document the information of their employee such as their family information and so on. After the task of documentation, DEES can start their employees training and continuously review and test their business continuity plan.
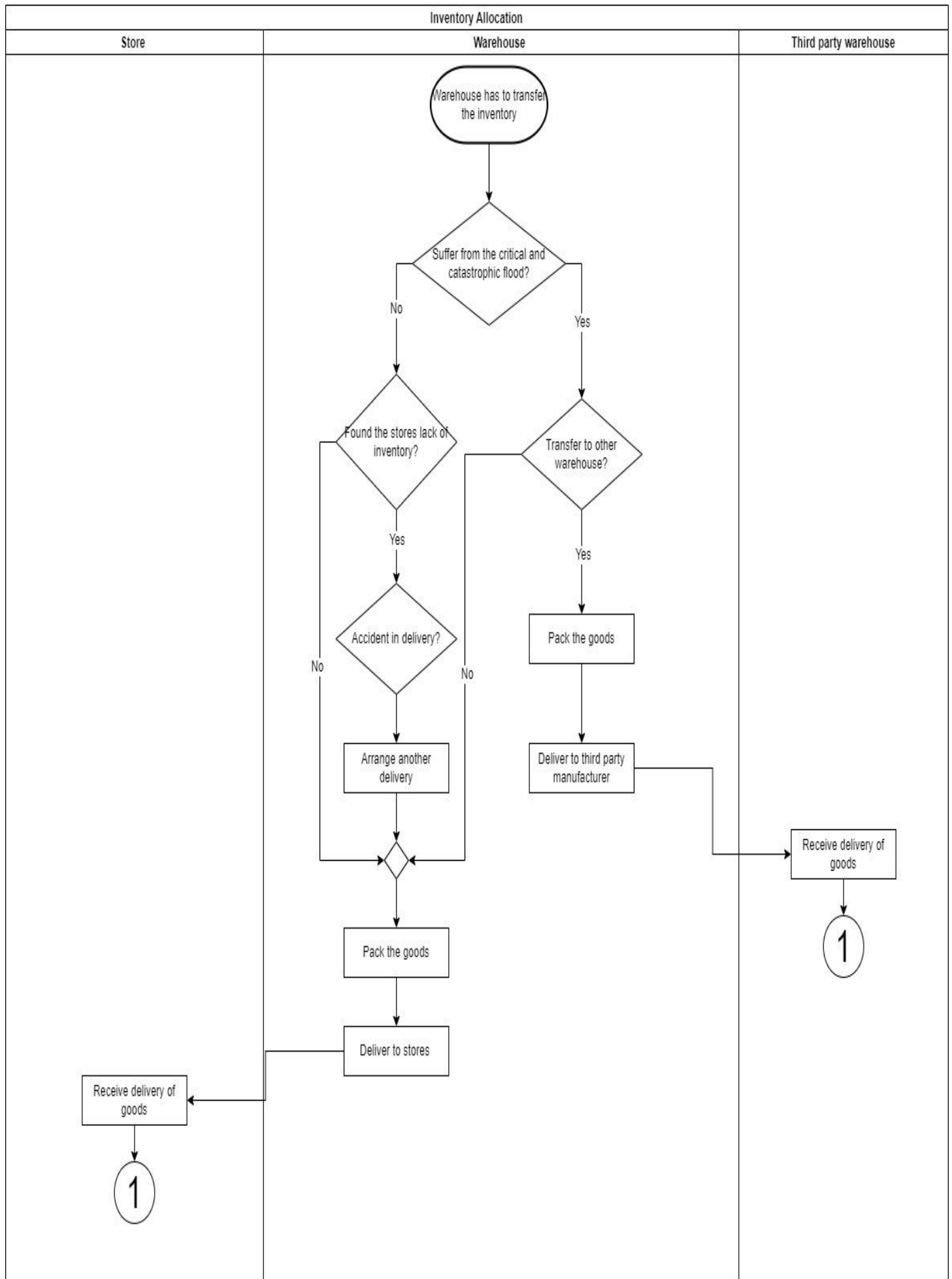
4.0 NEWEST INVENTORY ALLOCATION PROCESS

After the implementation of BRP and BCP, the resources allocation processes of DEES will become by the following:
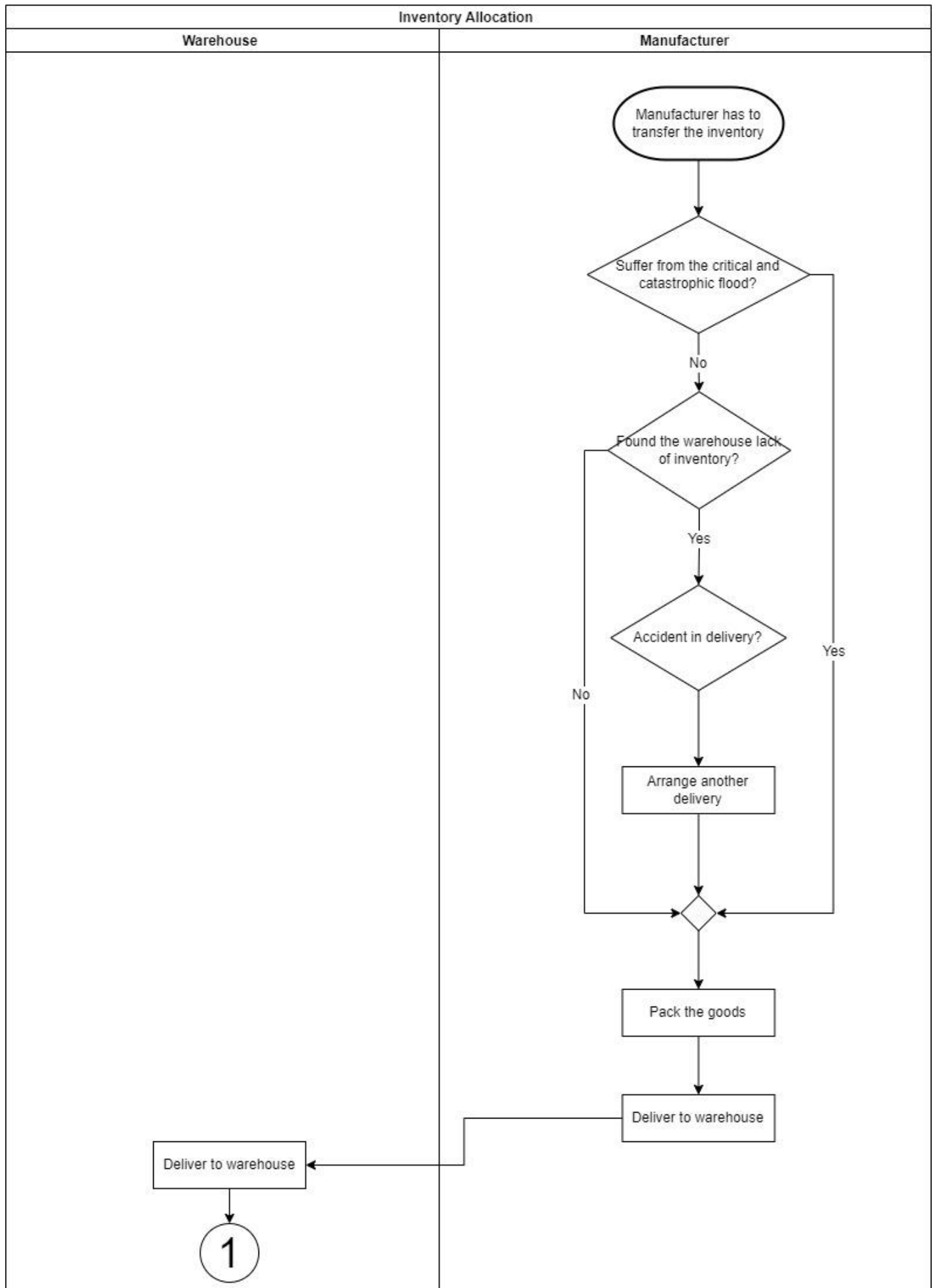
4.1 FROM STORE PERSPECTIVE
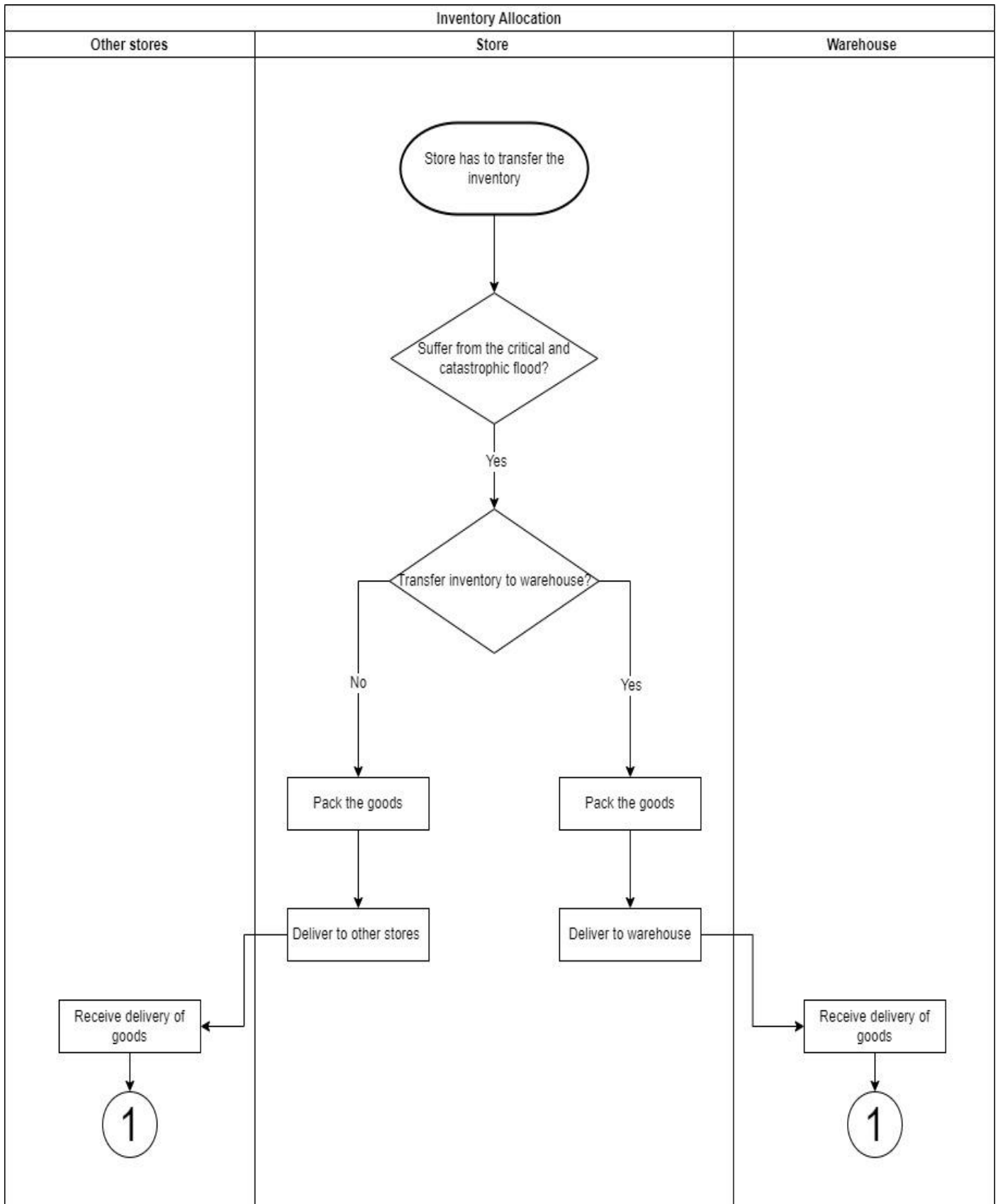
4.2 FROM WAREHOUSE PERSPECTIVE

4.3 FROM MANUFACTURER PERSPECTIVE

5.0 IMPLEMENTATION OF EMERGING TECHNOLOGIES

As mentioned before, DEES is a fashion trading company which is basically the gamut from manufacturing to selling. The implementation of ERP can be regarded as the improvement of Warehouse Management System (WMS), otherwise known as WMSs, which is the software system used to manage the operation and data of warehouse (Stazzone, 2022). On the other hand, a complete and prepared BCP is the factor that could make sure DEES will be able to recover from disaster rapidly. It helps the consideration of growth of company better since DEES concerns how to minimise the harm of disasters rather than focuses on how to increase their profitability. In a nutshell, ERP and BCP are the approaches and tools for increasing their daily basic operation. DEES has 25 years experience in the particular market, if they want to maintain their competitiveness and become the leader in the industry, DEES still has to make some changes.

5.1 EXPLANATION OF EMERGING TECHNOLOGY

One of the solutions is the implementation of emerging technologies. Emerging technology is the new technology in this world, it creates more opportunities and helps different fields of industry have better solutions to satisfy the problem and so on (Winston & Strawn, n.d.). The emerging technologies that can be applied by DEES include AI robotics and IoT in their warehouse management since it can help DEES in the improvements of inventory allocation.

5.2 AI ROBOTICS

AI and robots basically are related to the machine learning. It is making the big impact on warehouses around the world. It makes the efficiency and effectiveness of warehouse rockets dramatically. For example, the AGV is the automatic guided vehicles, it is a robot that can carry the inventory throughout a warehouse without the manual in man-made operation (Winston & Strawn n.d.). Without man-made operations, the safety of the working environment is better, and accidents will be decreased as well.

In this way, DEES can maximise the probability of automation and improve productivity in the situation of new inventory allocation processes. This is due to the implementation of BCP and ERP definitely increase the cargo flow. For instance, every time of the collection and carrying of goods will be done by the AI robots and only minimum manual labour (Pin 2022).

5.3 IOT AND BLOCKCHAIN

Then, Internet of Things is an emerging technology also, it is helpful for cargo management and tracking. DEES is not a commerce like the delivery services companies, those companies have a huge number of parcels everyday they can use IoT to track the parcels and so on. The functionality of IoT for DEES can ensure product location, prevent theft by employees or someone else and prepare for the future development of their business scale. For instance, the IoT enables the data of inventory stored into the blockchains (What is IoT with blockchain? - IBM Blockchain | IBM n.d.). Then, Blockchain is a special distributed database, the record will be written into the chain as a record and that is cannot be manipulated by anyone. At this point, each unit which

takes the goods should use the IoT technology to record the quantity of inventory into blockchain. So, it could help them to ensure the goods are safe and secure in every time of transportation. Once the DEES scale becomes bigger, they still can gain benefit from both the IoT and AI robotics.

6.0 CONCLUSION

Overall, ERP is a system, it can integrate the application or software system from all of departments that related to the operation of an organisation or enterprise and even across the organisations (Corporation n.d.). From this sentence, it means that it is a single system, the coverage of it includes HR, manufacturing, inventory management, allocation of DEES and so on. So, the ERP is not only help DEES in improvement of inventory allocation. It can be helpful in any other core operations of DEES.

Before the implementation of ERP, DEES has to clearly understand the problems, weaknesses, and even strengths in their current business processes. This is also the reason why DEES needs to analyse the inventory allocation process. Basically, ERP benefits are mainly reflected in two aspects, that is, the system and enterprise. The unity of the system increases productivity and streamline every core function needed by system. Then, the enterprise will gain benefits from this point directly. Besides that, the cash flow of DEES will be improved as well because the automatization of business processes improves the timeliness of inventory allocation. This will decrease the usage of warehouse, it means that the cost of warehouse management will be decreased. Moreover, the revenue will be increased if the products can be provided to customers on time. All of these are come from the nature of ERP, it increases business processes, supply chain, improves integrity of data and so on.

However, the limitation or failure may be met by DEES, also important to understand. Firstly, the cost of ERP is extremely expensive. The costs include third-party software, implementation costs, maintenance fee, employees training fee and ERP consultant fee etc (Barreto 2020). Furthermore, the process of implementation needs to consume a lot of time. The relationships between each department are stronger while the ERP is implemented by the DEES and any other enterprise. Once the employees are not used to the ERP system, the productivity will be decreased and the operation of business will be messed up. At the moment, the employees retraining plan has become necessary and it is pricey. In addition to these, the ERP solutions and plans that are given by vendors are important to understand as well. Once the DEES or the vendor misunderstand the business processes and the requirements, the probability of failure is bigger and it will become a sunk cost. It is absolutely lethal damage to the DEES. On top of that, BCP can make DEES has excessive sense of security if they think they have a complete plan to face the threats and disaster.

Concluding the above discussion, the paper discussed how ERP, BCP and emerging technologies (AI robotics and IoT) can help the DEES to promote their business operations. It also discussed what the limitations and disadvantages or risks may be met by DEES. The most important is the business should understand their

requirements and the goals to implement ERP, BCP and emerging technologies to make sure they can reduce the risk and failure. So, those elements will bring benefits to the company.

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