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Ans : Textile supply chain disruption is when an external force acts upon the business's ability to get, make, ship & sell products. Some of the examples of such external force include current COVID-19, government changes to policies, involving the global supply chain, cyberattack, etc.

The different types of disruption are.

- 1) Demand Drop : In the textile industry, the need or desire for the textile can fluctuate for myriad reasons and a reduction in desire is a demand drop. It can be easier to predict and mitigate the impact of an internally driven change such as new textile design or reduction in marketing efforts, etc.
- For example : Currently the textile for wool might be in high demand and the product is prepared in huge quantity, but a famous celebrity was seen wearing a silk textile, which caused the demand for wool to be dropped.
- 2) Reduced Productivity : Reduced productivity can be result of a labour shortage, equipment shortage or pretty much any event that reduces the output of the textile products. Each stage in the supply chain can experience labour shortage, broken equipment, etc but this viral outbreak has caused a huge (top) decrease across every stage.

- For example: Lablee a famous textile company had to let go of 30% of its employees due to COVID-19 pandemic. The impact of ~~the~~ pandemic has caused a huge impact on productivity of the textile supply chain.
- 3) Storage and Access Restriction: Manufacturing plants suffer contamination issues and warehouse shutdowns are common types of storage and access disruptions affecting the textile supply chain. Natural disasters and viral outbreaks are two external forces that often cause these types of restriction. For Example: Silk manufacturing textile companies need to take extra precautions in keeping the processing plant safe and ensure that there is no ~~contaminating~~ contamination occurring.
- 4) Raw Material Shortages: The input of raw materials are the key factor in the textile supply chain. Without the raw materials the final product can't be made which will cause a huge loss to the company.
Example: The COVID-19 pandemic has stopped all the export of cotton for clothing, shoes which are made in China. This restriction has impacted a lot for the textile supply chain.
- 5) Demand Surge: While some spikes demand such as upwelling holiday season can be predicted and accounted but sudden demand surge like production of masks to protect oneself from spreading in COVID-19. There was a sudden demand surge for cotton, which caused a huge impact.

QAns:

- The strategies to manage these disruptions in the textile supply chain are.

(2)

- 1) Demand Drop disruption can be handled by:
 - Evaluate the market: It is always a good idea to take note of where the demand is and how it can shifted. Regular review of data and insights will allow more informed decisions about restocking or readjusting inventory.
 - Take advantage of Technology: By adopting new technologies we can accurately do forecasting and predictions for the demand. This will help us avoid demand drops.
- 2) Reduced Productivity disruption can be handled by:
 - Regular Monitoring of devices: It is always good to do a periodic review (or) maintenance of all the equipment being used in the textile supply chain. This will help in identifying the faults and mitigating them in an early stage.
 - Communicate with Employees: In any company industry labours play a vital role. Proper communication and understanding needs to be maintained between the employees and company. The company should also hire extra staff to help relieve the burden in case of any shortage.

- 3) Storage, and Access Restriction disruption can be handled by:
 - (Opposite) Assess Alternative logistics: The supply chain should maintain alternative storage and logistic.

plans which will help in minimising the contamination
(iv) access disruptions.

⇒ Improve Inventory Visibility: By regularly checking the inventory levels and doing a periodic monitoring of the plants and warehouse will (not) reduce the disruptions for storing and accessing. Proper measures also need to be taken to ensure no human damage can occur.

4) Raw Material shortage disruption can be handled by

⇒ Build Backup Inventory: We need to take count of the inventory levels and decide how much safety stock should be maintained. Safety stock is a reserved amount of specific items to prevent stock out.

⇒ Diversify Suppliers: It is always better to diversify the suppliers so that even in case of any disruption, there will be an alternative supplier to gain the raw materials.

5) Demand Surge can be handled by

⇒ Prioritize Production: certain products gain high priority when the demand (not) is more (or) if there is any disruption in production. Prioritizing the most important products first will (not) avoid the risk of stock out.

⇒ Build Emergency Plan: (Each company should have a proper plan ready to be able to handle the sudden demand surge. By ensuring this we can avoid the product being out of stock and also ensure to have a safety stock of inventory available so that the textile products can be manufactured on such cases.)

3

Ans

The data involved in textile supply chain are.

- ↳ 1) Storage details about all the materials being used; size, quantity and type of the textile needs to be stored.
- ↳ 2) The count of products manufactured, the count of products which are in WIP (Work In progress) state.
- ↳ 3) Data of the Employees in Company: All the employee details, their name, age, job designation, leaves allocated, vacation count etc are to be stored.
- ↳ 4) Data of the devices being used: All the devices names, their configuration details, instruction manuals, product type, design type are stored.
- ↳ 5) Data of plant locations: All the various subsidiaries of different locations of the textile company needs to be stored and are stored.
- ↳ 6) Data of Suppliers: All the supplier details like product being supplied, name of supplier, location of supplier, amount being paid to the supplier are stored.
- ↳ 7) Data of Inventory: All the inventory levels, types of products being used, classification type of the inventory are stored.
- ↳ 8) Data of Ware house: All the locations of the ware house, the products being stored in the ware house, the storage capacity of each ware house are to be stored.
- ↳ 9) Data of Distributors: All the distributors available, the count of distributors, the count of distributors, the

fee being paid to each distributor are stored.

↳ 9) Data of Training : All the details of training being provided to the employees like duration of training, the capacity of trainers, the capacity of participants, are stored.

↳ 10) Data of Sales : All the details of products being sold, the feedback from customer, the products being returned.

↳ 11) Data of survey's filled by customers : All the feedback given by the customer needs to be stored.

↳ 12) Data of Employees feedback : All the feedback given by the employees during their annual assessment are to be stored.

↳ 13) Data of Invoice bills : All the pre-ordered purchases invoice details needs to be stored.

↳ 14) Data of Designs for Textile Product : All the design changes being done to the product, the dimension changes, the shape changes are to be stored.

↳ 15) Data of Technology being adapted : All the details of the technology or software being used like AI, ML, BitCoins, etc.

↳ 16) Data of Policies & Procedures : All the company policies and procedures are to be stored. All the archived data also needs to be backed up.

↳ 17) Data of Past disruptions : All the data of previously effective disruptions needs to be stored as they may be helpful in predicting and mitigating future disruptions.

Ans

(4)

- In the textile industry the fashion trends are never same, they always keep on changing depending upon the consumer's tastes and preferences. The strategies applied by organizations like Zara or H&M are

↳ Human Resource Management: By employing fresh graduates and undergraduates new trends and latest designs will be identified and as they do not have any family responsibilities, they can focus more on work.

↳ Technological development: All the latest technologies like AI, ML are used to identify new trends and predict the demand changes.

↳ Marketing and sales: The companies select large posters and ~~post~~ employee famous celebrities to showcase their brand which improves the marketing and sales of their products.

↳ Focus on Core Activities: The companies will focus more on the design and quality of the products. This will help in increasing the value of the price and manufacture only high quality products.

↳ Quick Response to demand: The companies will design limit amount of products every month and monitor the customers spending in store to evaluate & understand what type of designs are being consumed more.

- ↳ small batch Production: They produce small quantities of every product. This gives them the opportunity to quickly understand what designs are successful and understand the acceptance rate in market.
- ↳ central Distribution centres: They employ a very strong IT systems that back its distribution. All the clothes are shipped to central location and then distributed to different locations.
- ↳ Reduce Overhead: Overheads lead to cost of space that is rent, utilities, warehouse, etc. By reducing the overhead we will be paying less labor cost and this will reduce overall production value.
- ↳ Staffing flexibility: On seasons where the demand is more, the company will hire extra staff to manage the demand and supply.
- ↳ Infrastructure: The manufacturing plant is equipped with all the latest technologies and devices. And they are periodically reviewed and maintained.
- ↳ Warehouse facilities: The companies will increase their market presence by positioning their stores in many places and display sale during demand drop.

Ans

(Q1) ~~What is it?~~

- A sustainable supply chain is one that fully integrates ethical & environmentally responsible practices into a competitive and successful model.
- Social Responsibility: In the supply chain we should ensure that the employees are being treated fairly and the safety measures are taken. They ~~should~~
 - ↳ They should be paid for the work they do
 - ↳ Provide a safe and healthy work environment
 - ↳ Free from harassment and violence
 - ↳ Be compensated for overtime.
 - ↳ Be treated with respect.
 - ↳ Have an equal opportunity.
 - ↳ Make sure all laws, customs are being respected.
 - ↳ Ensure the policies and procedures are maintained.
- Financial Responsibility: It is about fulfilling the obligations to partners, employees and the communities in supply chain.
 - ↳ Regularly auditing the company finances
 - ↳ Periodically paying the tax to government
 - ↳ timely paying the employees
 - ↳ Not engaging in bribery
 - ↳ Not engaging in illegal activities

- ↳ Maintaining Insurance coverage to employees & company
- ↳ Provide pensions for employees
- ↳ Abiding to legal rules and regulations
- ↳ Supplying payment on time for supplies & distributors

- Environmental Responsibility : It is about protecting the environment from the potential harm caused by a business operations & its subsidiary companies.

- ↳ Ensure that the waste is treated properly
- ↳ Make sure all the hazardous material are being treated well.
- ↳ The amount of water used & how it is treated before sending back to environment.
- ↳ How the animals are being affected by the industry
- ↳ If the location of the warehouse or plant is causing harm to environment.