**INTERNSHIP QUESTIONS - DEPARTMENT OF LOGISTICS MANAGEMENT**

**Type 1 Companies:** Manufacturing/Production Companies such as automotive (motor vehicles), (heavy) machinery, chemicals, food, furniture, electronics, consumer products, medical, aviation etc.

**Type 2 Companies:** Service Providers such as logistics firms, forwarders, 3PL firms, transportation companies (road, rail, aviation and maritime), retail companies, wholesalers, customs brokerage, ports, airport, cargo/courier firms, governmental organizations such as AFAD, TCDD, municipalities, non-governmental organizations (NGO) such as Kızılay, Unicef, Soupkitchens, healthcare organizations...etc.

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| --- | --- |
| *GRADING POLICY* |  |
| *Students should take min 50 points from the internship file to be successful* |  |
| *If at least one section takes fail* | *FAIL* |
| *If at least one of the sections  needs revision without any fail* | *REVISION* |
| *If all sections are passed* | *PASS* |

* **The grading policy for LOGI4000 are shown below the tables**

**Grading for each section**

|  |  |
| --- | --- |
| above 50% | PASS |
| 30%-50% | REVISION |
| below 30% | FAIL |

**Formatting Rules:**

* 12 Punto Times New Roman
* 1.5 line spacing
* Add space before paragraphs
* Justify the text
* Add page numbers to the bottom
* Please use paragraphs for explanations, not bullets.
* Use the section headings in your report that are presented below
* Use the cover page that is presented in the last page

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| --- | --- | --- |
| **SECTIONS** | | **Sections** |
| **1** | **INTRODUCTION TO THE COMPANY** | **Introduction (Out of 5)** |
| **2** | **GENERAL PRINCIPLES OF MANAGEMENT AND ORGANIZATION** | **General Principles of  Mang. and Org.(Out of 15)** |
|  | **Management Functions** |
|  | **Organization of the Company** |
|  | **Marketing Activities** |
| **3** | **SUPPLY CHAIN STRUCTURE** | **Supply Chain Structure (Out of 36)** |
|  | **Major Logistics Activities** |
|  | **Order Fulfillment** |
|  | **Inventory Management** |
|  | **Freight Transportation** |
|  | **Facilities Location and Layout** |
|  | **Warehousing and Materials Handling** |
| **5** | **MANAGEMENT INFORMATION SYSTEMS** | **Management Information Systems &  Purchasing and Procurement & Enviromental Issues &  Other Issues (Out of 24)** |
| **6** | **PURCHASING & PROCUREMENT** |
| **7** | **ENVIROMENTAL ISSUES** |
| **8** | **OTHER ISSUES** |
| **9** | **OPTIMIZATION AND DECISION MAKING PROBLEM** | **Optimization and Decision Making Problem  (Out of 15)** |
| **10** | **Style and Format of the Report** | **Style and Format of the Report (Out of 5)** |
|  | **TOTAL (Out of 100)** |  |
|  |  | **TOTAL (Out of 100)** |

**TABLE OF CONTENT**

**1. INTRODUCTION TO THE COMPANY**

The following information about the company should be provided:

* Full title:
* Address:
* Web site:
* Brief history of the firm; if available give information about its parent company or subsidiaries
* Employment data (number of employee and its classification (worker, technician, engineer, administrative staff etc. or blue collar/white collar personnel):
* Approximate annual sales (including exports), market share, and competitors
* What is the main field of the business and company’s main products/services?

**2.1 GENERAL PRINCIPLES OF MANAGEMENT AND ORGANIZATION**

**2.1.1 Management Functions**

* Describe how the management functions (such as Planning, Organizing, Staffing, Directing, and Controlling) are performed in the company.

**2.1.2 Organization of the Company**

* Discuss the organizational structure of the company referring to the organizational chart (if it is not available, prepare it yourself).
* Report the duties and responsibilities of the departments within organization chart of the company (logistics, finance, marketing ... etc.). Explain relationship between departments and give examples about how hierarchical structure of company affects document and approval requirements within this hierarchical structure.

**2.1.3 Marketing Activities**

* Explain the marketing strategy of the company.
* Explain company’s strategies about pricing policy, positioning and targeting activities with examples, if available. If company does not have any such activities discuss the potential activities and their benefits that company may adopt.
* Give ongoing examples about Customer Relationship Management (CRM) applications of the company, if available. If not, either explain why CRM is not appropriate for this company or discuss how CRM would help marketing activities of the company.

**3. SUPPLY CHAIN STRUCTURE**

* Describe the supply chain structure of the company. Is the company an upstream or downstream part of supply chain?
* Which supply chain strategy is preferred? (push, pull or push/pull strategy)
* Does the company involve any production/manufacturing activity; if so give brief information about the operation work flow.
* Explain the distribution channels of the company.
* Explain input and output of the company. Briefly discuss the material flow, information flow and the financial flow. How are these flows routed throughout supply chain?

**.1 MAJOR LOGISTICS ACTIVITIES**

* Give a detailed framework for the major logistics activities of the company. Are any of these activities are outsourced by the firm? If so which activities are outsourced? Why?
* If none of the logistics activities are outsourced discuss why not.
* Describe the logistics system of the company. Use flow diagrams.
* Is there any third-party logistics provider involved in the process?
* What are the main logistics facilities used by the company (or 3PL)? Why, why not?

**3.1.1 Order Fulfillment**

* How long does it take to process a single order? Consider several items and note how long each operation (i.e., receipt, transmission, confirmation of customer orders; retrieval of the product from stocks, packing and delivery) lasts.
* What kind of information technology tools (e.g. bar code scanning, RFID, electronic data interchange (EDI), etc.) are used for order processing? If not discuss the relevance of the usage of the technology?

**3.1.2 Inventory Management**

* Give an explanation about company’s inventory policy. What types of inventories are kept in the company (for manufacturing companies: raw materials, work in process (WIP), finished goods etc. / For service companies: stationery, office supplies, fuel oil etc.) and what are the average inventory levels for some selected items?
* How does the company determine inventory levels? (EOQ, etc.)
* What is the reason of the company for holding inventories? (uncertainty, bullwhip effect, seasonal fluctuations, etc.)
* How important is inventory to a firm in comparison with transportation and warehousing?
* What is the consequences of the being out of stock for a selected item for the company, give an example.
* Similarly, what is the consequences of having ample stock for long time periods for a selected item for the company, give an example.

**3.1.3Freight Transportation**

* Which transportation services does the company (or 3PL) own, hire or use?
* How many and which type of transportation equipment does the company (or 3PL) have?
* What modes of transportation are used by the company?
* Does the company use intermodal, multimodal or combined transportation for their activities if so explain in detail.
* Does the company have private transportation, contract transportation or carrier transportation processes?
* Is there any freight consolidation, milk-run or cross-docking activities taking place?
* How are the unit transportation costs determined in the firm? If they are not calculated, determine the unit cost as the ratio of (Total cost/Quantity).
* How the routes of the distribution vehicles are determined? Does the company use vehicle routing software, Geographical Information Systems (GIS) infrastructure, Transportation Management System (TMS), special software for managing their activities, or etc.? Discuss the pros and cons of these choices.

**3.1.4 Facilities Location and Layout**

Give the answers of this section according to the major facility of the company (Such as plant, distribution center, shopping mall, warehouse, depot, port, airport, headquarter, main office, branch office)

Factors that affect location decisions:

* + Market
  + Community services and attitude
  + Water and waste
  + Laws, tax regulations
  + Proximity to source of raw materials & customers.
  + Proximity to logistics nodes (e.g. airport, freight village, port etc.)
  + Cost and availability of energy and utilities
  + Cost, availability, skill and productivity of labor
  + Construction costs and land price
  + Transportation system
  + Business Climate

Consider one of the main facility of the company: HQ, factory, vehicle park, airport, seaport, warehouse, distribution/dispatch center, major retailing outlet, mall (AVM), collection center…etc., Have any of the above factors taken into account when it was decided to locate the facilities at their present location? Evaluate the appropriateness of the firm location with reference to these factors.

* Show company’s geographic location, hinterland and its connections to logistics nodes on the map.
* Prepare a block plan of the plant/facility (or supply a blue print, if one exists in the company). For the departments shown in the plan above, prepare an activity relationship chart. According to this chart prepare an alternative improved layout. If you think there cannot be any improvement explain your reasons.
* What are the types of layout in the plant? Choose one and explain in detail, including the advantages and disadvantages of the different types of layout used.

**3.1.5 Warehousing and Materials Handling**

Answer below questions if the company operates (itself or via a 3 PL) a warehouse/depot.

* Write what kind of warehouses are used by company (bonded warehouse, distribution center, cross docking warehouse, etc.)
* Give the approximate number of SKUs (Stock keeping Units) tracked by the company.
* Which storage strategy is preferred: Ddedicated or shared storage?
* Give details about order picking methods? Discuss their appropriateness, do you think the selected method is the best method, how they can improve the current method?
* What kind of packages are used by the company (primary, secondary, tertiary, etc.) , give detailed information with examples?
* Write what kinds of materials-handling equipment are used in company’s warehouse/s and explain their usage?
* Draw the layout of the warehouse (Give the aisle configuration of the warehouse, show receiving and shipping doors, and the other areas)
* Are automated storage systems used by the firm? If not, evaluate the potential usage and cost justification of constructing an automated system.

**4. MANAGEMENT INFORMATION SYSTEMS**

* Describe the information flow within a department of the company in detail. Provide examples of the forms used for information flow and explain their functions.
* What type of information is transferred to which department(s) and from where?
* What is the information flow media (for example, do they use computers for this purpose) through the departments? Add some examples of the forms used for information flow and explain their functions.
* Which tools are used for collecting information data (RFID, QR, Barcode, Smart Card, etc.)
* What types of computer programs and software packages are being used? Potential software packages can be about ERP, Business Analytics, HR softwares, MRP, Accounting, Decision Support Systems, Business Intelligence, etc. to name few. Do you recommend any business or office software for the company to support their workflow?
* Describe the information flow through (company’s) supply chain with drawing information flow process.
* Explain how company ensures security of their information?

**5. PURCHASING & PROCUREMENT**

* Explain company’s supplier selection criteria?
* Explain company’s purchasing process model step by step and draw purchasing process with showing purchasing functions.
* Does the company use any index to evaluate/s the purchasing manager/s (like Purchasing Manager Index (PMI), etc.)? If not which performance tools can be used for evaluating manager’s performance?
* What criteria are essential for the company in the contracts or negotiations?
* What kind of procedures followed?

**6. ENVIROMENTAL ISSUES**

* Does the company make any green logistics activities?If so give detailed information about the activities. Based on your understanding and observations how beneficial these practices. If company do not have any green logistics activities\ can you suggest some potential implementations for them. Discuss briefly. (If available, if not discuss why and give relevant examples?).
* Is there any social responsibility campaign or project that made by the company? (if so write project or campaign name/s and give detailed information about this/these project/s)
* Does the company use any reverse logistics activities or product recovery management process? (if so give detailed information about the processes).

**7. OTHER ISSUES**

* What are the potential risks of the company? How do they assess potential risks?
* Does the company use any risk management tools (risk mapping, process map, decision tree, statistical tools, etc.) for reducing their bad outcomes, if so give detailed information about risk management tools with their usage?
* What are the company’s mandatory certificates and non-mandatory certificates? (ex: ISO 14000, ISO 9000, HACCP, ISO 9001,ISO 14000, CE, or any patents)
* Analyze company’s strengths, weaknesses, opportunities and threats with SWOT analysis.
* Which tools that are listed below used by the company? (explain briefly tools that used by company, if not which tools should be used by company explain briefly)
  + JIT(Just In Time)
  + Lean Manufacturing/Logistics
  + 5S
  + Kaizen
  + Six Sigma
  + TPM(Total Productive Maintenance)
  + TQM(Total Quality Management)
  + VSM(Value Stream Mapping)
  + SCOR
  + Agile/Leagile
  + 360 degrees Performance Appraisal
  + Balanced Scorecard

**8. SYSTEM ANALYSIS and DECISION MAKING PROBLEM**

In this part you require to detect one area of improvement within the company, define the problem, model it using tools you have learned in your classes and propose a solution (hopefully an improvement) The optimization problem can be in any area (or combination of areas) related to the company's operations, such as inventory management, transportation, warehousing, facility layout, etc. The problem can either be deterministic or stochastic.

Answer the following questions:

1. Clearly explain the following items. Do not use symbols like x and y, just explain them in plain English:

-Problem definition: Explain the problem. Also explain is this problem deterministic or stochastic.

-Decision variables: Explain what decision you are making to minimize or maximize the objective function?

-Objective function: Explain what is the objective of this decision making process. What do you want to achive?

-Constraints (limitations): Explain what constraints are limiting the objective function value.

-Parameters (inputs): Explain the controllable and uncontrollable inputs/constants (given numbers) in the model.

-Assumptions: Explain any assumptions that you make for modeling this problem.

2. Collect data for the above mentioned items. You can use either the values provided by the company or collect data by yourself if no data is available. The data that you will need to collect may depend on the problem you will choose, but some examples are the number of inventory at hand, transportation time/distance, production cost, product price, product demand, etc. Report the collected data.

3. According to your problem definition and data, formulate a mathematical model to solve this problem (maximize or minimize your objective function by changing decision variables).

4. Although the real problem can be very large to solve, create a toy problem (small sized and simplified instance of your real problem) and solve it using an appropriate method. Report the problem, your solution procedure, and results. You can also use computer tools such as MS Excel to compare your solution.

5. Is this problem realistic? How can you make it more realistic? How could you solve this problem if this problem was stochastic (or deterministic)?

6. Discuss pros and cons of your solution/proposal with respect to the existing solution/practice used in the company.



**DEPARTMENT OF LOGISTICS MANAGEMENT**

NAME AND SURNAME

STUDENT ID

INTERNSHIP REPORT

LOGI 4000

2022