Submitted in Partial Fulfilment of the Requirements

for the Award of the Degree of

Bachelor of Science in Computer Science and Statistic

Internship Report

SUBMITTED BY:

Gregery

Boby

Reg. No

2340223

CHRIST (DEEMED TO BE UNIVERSITY)

BANGALORE-560029 INDIA

LIST OF FIGURES:

Chapter 1

Introduction to the organization

1.1   Profile of the Organization

Tentacles Aerologistix Pvt.Ltd

Tentacle Aerologistix Private Limited is a private company which was incorporated on 8th April 2008. It is classified as a Non-government Company and is registered at Registar of Companies, Bangalore. Its authorized share capital is around Rs. 10,00,000 andits paid-up capital is Rs. 1,00,000. It is also involved in Non-scheduled air transport. Tentacle Aerologistix Private Limited's Annual General Meeting (AGM) was last heldon 30 September 2023 and as per records from Ministry of Corporate Affairs (MCA), its balance sheet was last filed on 31 March 2023. Directors of Tentacle Aerologistix Private Limited are Eldo Thattumpurathu Iype, Smitha Mathew, Cherian Joseph, Patingaruveetil Sreejith and Ajith Abraham.

Liberalization among the Indian Aviation sector emerged out as the usher guiding trans-formation among the aviation logistics industry. This was once a government-owned industry which became the cultivating ground for privately owned full-service airlines and low-cost carriers.

In the face of being a burgeoning market, Aviation logistics still angles as the most com-plex one across the Indian industry carrying several hurdles to its realization. This sphere demands aviation logistics to dish out their expertise in a different way to let theirinput bring a lot of value to the vertical. Among this fast-growing spectrum, Tentacle Aerologistix Pvt Ltd (Tentacles) holds ambitious plans to capitalize on the abundance of skilled manpower and low overheads in India and enter JVs to have extended manufacturing and

services facilities in-house.

Its Commercial Director, Mr. Eldo T Iype, details how Tentacles intends to grow its capabilities and wing with unmatched delivery time and technical expertise to its clientele. Aviation logistics in India is a critical part of the smooth functioning of an aviation company as 90% of the spares and consumables are to be imported from the US and Europe. This demands an efficient aviation logistics system and there, the role of Tentacles has been reflected. It is India's Integrated Aviation, Aerospace, Marine, defense and Engineering Procurement and MRO Solution provider assimilating products and services into a total customer logistical support program.

With their AOG (Aircraft on Ground) Support centers in India and USA, Tentacles provides 24/7 spares and consumables support worldwide for aviation clients. Their broad work sphere includes:

- **AVIATION**
- **AEROSPACE AND DEFENCE**
- **MRO (MATERIALS REPAIR ORGANIZATION)**
- **AVIATION ACADEMY**

1.1.1 Aviation:

The company was formed with one mission-to support aviation operators around the world. They have exclusive partnerships with various international OEMs (Original Equipment Manufacturers) and are backed by in-house tech expertise which makes Tentacles the partner in choice for the aviation industry. Their wider supplier network locates the 'hard to find' parts easier than anybody else around the globe. The company not only ensures speed but also quality, efficiency and great customer service. Their major product line would include - Airframe Parts, Engine Parts, Aviation Consumables, Aircraft Spare Parts, Aircraft Tyres, Avionics and Instruments, All types of Aviation Hardware and many more.

1.1.2 Aerospace and Defense:

Tentacles has been providing high quality components, chemicals, raw materials, measuring instruments and consumables to the Aerospace and Defense industry for over a decade. As an authorized distributor for a host of internationally recognized manufacturers, we

provide wide range of products with competitive pricing and best lead time. They are the exclusive distributors of Devices and Services in India who are specialized in Thermal and optical instrumentation equipment for the Solar and Aerospace industries. The major equipment include - Solar Spectrum Reflectometer SSR version 6, Portable Specular Reflectometer 15R-USB, Emissometer with Scaling Digital Voltmeter AE1 RD1, Multiple wavelength Portable Specular Reflectometer 15R-RGB. They also distribute Specialized Tools, ESD and Cleanroom Needs and many more.

1.1.3 MRO:

Tentacles has stepped its foot in the field of Maintenance Repair Organization (MRO),to setup a benchmark in Aircraft maintenance. They are also setting up a Maintenance Hanger with the capability to handle Fixed Wing, Rotary Wing and Component Shop's with the varying capability. Tentacle MRO will initially handle Bell 206 Series/Bell 407 Components and Helicopter Landing Gear Overhaul. The MRO team is Factory-Trained and shares vast experience in the overhaul and repair of dynamic components. Their main mission is to offer top quality, value-enhanced Aircraft component Repair and Overhaul (MRO) Services. They aim for high quality, timely and reliable maintenance with cost effective solutions which can meet or exceed Original Equipment Manufacturer (OEM) specifications. Their customized solutions offered will facilitate customers to 'Repair rather than Replace' their aircraft components.

1.1.4 Aviation Academy:

Tentacle Aviation Academy, a division of Tentacle Aerologistix Pvt.Ltd, is a DGCA (Directorate General of Civil Aviation) approved training facility for conducting Dangerous Goods Training in all 12 categories as per International Civil Aviation Organization's (ICAO) Technical Instructions. They do provide state of the art facilities, professional faculties and industrial experts to mentor and mould the candidates effectively for professional excellence and the aviation industry to benefit. Their course certificates offeredare also internationally valid.

More about the Organization:

Since their inception in 2008 Tentacles has expanded their production and distribution base. In 2009 they started their US operations. In 2010 they expanded the same in the SAARC. In 2011 the Tentacle Aviation Academy, which is DCGA (Directorate Generalof Civil Aviation) approved DGR training academy. In 2012 they extended their handsto the defense. In 2013 they received ISO 9001:2008 certification. In 2014 they emergedas Aeroshell distributor. In 2015 they have become one among the leading suppliers for Defense and Government. In 2017 they became the D & S (Device and Services) distributors. In 2017 they emerged as the Aeroshell Defense distributor.in 2019 started distribution with Good Year Aviation. In 2020 they received EN 9120- 2008 Certification. The company is a team of techno-commercial experts with decades of industry experience to capitalize on.Their customer-centric approach and technical expertise have taken care of their value proposition to the industry. More than 70 % of the team hails from Aircraft Maintenance or Aeronautical Engineering background, making it unique for an aviation logistics organization. Their efficient widersupplier network locates all the 'hard to find' parts easier than anybody else. Since its inception in 2008, Tentacles have succeeded in maintaining the position as the leading aviation supply chain management company in South East Asia, known for their time defined, cost-effective, and personalized repair & procurement solutions. With a goal tosupport the growing requirements of the dynamic aviation industry, Tentacle Aerologistix Ltd was established to provide a reliable and consistent support system for the market demands in South East Asia and Middle East.

1.2   Vision, Mission, Goals of the organization

Mission: At Tentacle Aerologistix Private Limited, our goal is to constantly exceed our clients' expectations and bring the most value to every interaction in order to deliver unmatched professional services. To guarantee the highest level of satisfaction for our stakeholders and clients, we are dedicated to consistently improving our outputs.

Vision: Our mission at Tentacle Aerologistix Private Limited is to empower our clients to transform the way goods and services are provided around the world. Through our work, we hope to provide more rapid, safer, greener, and cost-effective solutions than ever before, spurring innovation across global industries.

Goal: Our main objective is to become the most trusted and sought-
after service provider for the changing demands of the fast-paced aviation sector.

Our goal is to become the go-
to partner for businesses looking for dependable and dependable solutions that promote quality, efficiency , and growth.

Chapter 2

Project/ Task Description

2.1 Background of the internship

Data Analysis is a process of inspecting, cleansing, transforming and modelling data with the goal of discovering useful information, informing conclusions and supporting decision making. A Data Analyst can help in making certain valuable conclusions and recommendations, that can be very helpful.

The role that was given to me was that of a Data Analyst. My main aim was to analyze the data provided and to give valid suggestions and recommendations. The analysis of certain data types wasn't clearly reflected, and my internship required that the same data be analyzed to help the company in understanding their current financial and economic stability and position. The internship also provided me with an excellent platform to learn about many new aspects and structures of working environment. My job also required the need to suggest new and effective ways in which the company could contribute more to the society and increase their profits.

My job designation required the careful monitoring and tracking of the data related to different divisions and fields of Tentacles. This way the trend could be analyzed with ease. Also, the main aim of the internship is to use the various concepts and tools which are present in the field of Statistics and computer science. My job designation also required the crucial analysis of the firm's profits, sales and many others to find the company's trend and to help them to make future predictions.

 I was assigned to Mr. Ajaykumar Shanmugam sir who is an integral part of Tentacles family. Most of the data was provided to me through my mentor. The data provided was secondary data. The use of many Statistical concepts and tools were done for the complete analysis of the data. My internship is basically focused on the Statistics domains. Analyzing the Sales, Purchase and other similar data using statistical tools. The combined task of getting a good experience and helping Tentacles to understand their performance in various

divisions, for further improvement has helped me to gain a good knowledge in the working sphere as a Data Analyst.

The major task assigned to me was to analyze the data of the company for the past few years and to give them valuable suggestions, conclusions and recommendations regarding the same. The analysis of all the data has been done using Excel and R-Programming software. The details explaining my analysis and their corresponding conclusions has been explained further.

The main dataset that was initially analyzed by me was regarding the "Sales and Purchases" of the company. Other topics and areas under my analysis includes the data regarding the Inventories, Invoice, Dangerous Goods Regulations, Balance Sheets, Debtors List, Major Client base and few others. All the data that was provided was of one financial year. A strong comparison with the previous year was also done to understand the trend in a better way.

One among the major skills needed as a "Data Analyst" is to crucially analyze the data and understand the trend in it. During my internship I undertook the task of reportingmy duties and activities to my mentor and the director of the company as well. These reports that were done by me also helped the company to understand my progress as an intern. Major task undertaken was to analyze the Sales of the company and to conduct various comparisons between Sales and other variables to understand the presence of any trend. The data of Sales has been compared to other data like Purchases, Surpluses andso on. Finally, the growth and performance of Tentacles along with the growth of the Indian Aviation Industry has been obtained.

2.2 Goal and Objective of the internship

The main Goal of my internship was to get a good understanding about the functioning of the firm and to understand the various aspects and ideas that are to be noted while undertaking the work in a similar organization. There arise certain situations where afirm is not equipped with the necessary details regarding their profits, credits or debitsor other such data. In such situations a "Data Analyst "can be a good help and can work as a support system to reflect the problems faced and in providing suitable solutions forthe same. My goal through this internship was also to provide a few valuable recommendations and conclusions to the firm, which would help them to tackle with certain issues.

I would also like to accomplish the following as my internship:

- To understand and explore the alternative world of Aviation which is growing and developing at a very high pace.

Aviation Industry in India is developing in a very fast pace and the need to understand and cater to such growing demands should be analyzed to understand how to simultaneously balance the high demand and the depleting resource base by applying different types of approaches.

- In depth knowledge and experience in different divisions of the firm.
- To generate certain solutions which could be helpful to tackle certain issues.
- Developing various ideas to help connect data various fields in Aviation using statistical tools for analysis.
- Analysis of the data using different Statistical tools will help in getting a better and representative results.
- To ensure a good exposure to a different field of operation and their work ethics.

Through my internship I would also like to achieve the major objective of getting a good experience.

The main objective of this internship undertaken is to analyze the data from the view-point as a Data Analyst and to provide several valuable suggestions and recommendations from the same. Since the firm had no separate division for analysis of their data, the data that had been provided by the company had to be analyzed with utmost precision to reflect the underlying reasons for many issues. The aim of the internship is mainly to understand the true nature of a working environment and to get a good exposure to the same. The data has been analyzed and several conclusions were also reached.

Different datasets were provided regarding different divisions of the company, and these were analyzed to give certain conclusions and also to learn about the functioning of the company. Data regarding "Sales and Purchases" was the main area of focus of my analysis. Analysis of the same could help a lot in reducing the company's purchases and improving their sales, in monetary terms.

2.3 Scope and limitation, key project and initiatives

Scope

Data Analysis Scope: I concentrated on evaluating a variety of datasets during my internship at Tentacles Aerologistix Pvt. Ltd., including sales, purchases, inventories, invoices, balance sheets, debtor's lists, and customer data. The thorough investigation yielded information about the operational and financial performance of the business.

Recommendation Scope: My goal was to come up with practical suggestions that would solve problems with operations, boost sales, improve purchasing tactics, and increase overall organizational effectiveness.

Learning Scope: My internship gave me the chance to learn a great deal about all the different departments inside the company. I gained a deeper comprehension of the aviation sector and investigated creative ways to balance high demand with limited resources.

Statistical and Economic Scope: I used statistical and economic concepts to examine data, spot patterns, and create well-informed suggestions meant to support the company's long-term stability and growth.

Limitations:

Data Limitations: The datasets the company provided for the analysis may not have been the most accurate, full, or relevant. Restrictions on access to specific datasets affected the analysis's depth.

Theoretical Limitations: I had trouble converting abstract ideas into useful analysis because I was new to the topic, which might have affected how deeply I interpreted things.

Resource Limitations: The depth of research and the capacity to provide complete suggestions across all operational elements were limited due to restricted access to additional data and resources.

Time Constraints: The timeframe of the internship placed restrictions on the amount of data investigation, in-depth analysis, and alternate solution exploration for operational difficulties.

Experience Limitations: My lack of experience in company operations and data analysis as an intern may have limited my capacity to perform in-depth studies or offer extremely specific advice.

Despite these challenges, my internship at Tentacles Aerologistix Pvt. Ltd. was an invaluable learning experience. It provided me with an opportunity to apply theoretical knowledge in a practical setting, contribute meaningful insights, and propose actionable recommendations to enhance the company's operational efficiency and performance.

2.4   Key Projects and Initiatives

Data Analysis of Sales and Purchases: I conducted a thorough examination of Tentacles Aerologistix Pvt. Ltd.'s sales and purchase data during my stint there. The purpose of this research was to find patterns, highlight areas that needed work, and eventually maximize the financial performance of the organization.

Inventory Analysis: Analyzing inventory data was a big part of my internship as well. I evaluated inventory management procedures generally, turnover rates, and stock levels. The goal of this project was to pinpoint inefficiencies in inventory control and offer solutions for improving stock levels and streamlining supply chain operations.

Financial Data Analysis: I performed thorough assessments of financial data, including balance sheets, debtor's lists, and other financial records, in addition to sales and purchases. These evaluations provide insightful information about the state of the company's finances, liquidity, and general performance.

Client Base Analysis: I carried out a thorough investigation of the company's principal customer base. This project involved dividing up the clientele, evaluating how each one contributed to the business's earnings, and finding ways to improve client interactions and diversify the clientele.

Recommendation Generation: Throughout my internship, I concentrated on coming up with practical suggestions based on insights gleaned from data. These suggestions were made with the intention of strengthening the business's operational and financial plans, increasing profitability, and promoting well-informed decision-making.

Exploration of Aviation Industry: I investigated the aviation business as part of my internship goals. This project entailed studying market trends, learning about the workings of the aviation industry, and figuring out possible directions for advancement in this niche area.

Learning and Skill Development: There were lots of opportunities for learning and skill improvement during my internship. I participated actively in several of the company's divisions, improving my skills in

statistical and economic analysis and broadening my knowledge of the business's operations and the aviation sector.

My internship experience at Tentacles Aerologistix Pvt. Ltd. was enriching and rewarding. The projects I undertook not only allowed me to apply my analytical skills and problem-solving abilities but also reinforced my commitment to delivering valuable insights and recommendations that contribute to the company's growth and success.

2.4 Detailed description of the Project

The first main activity that i performed was to analyse the Sales and Purchase data of the firm. My mentor had given me the data that was needed and supported me with many information regarding their company. The basic idea regarding the working methods and structure was given. Another dataset that was given for analysis was Balance sheets, Client base and few others. All these had to be clearly analysed and sorted, if required,and a report containing the same was to be submitted during my tenure.

Analysis and Interpretation

2.4.1 Sales and Purchases:

The major analysis conducted by me includes the analysis regarding the "Sales and Purchases" of the company. This was important to me because this data will help the company the most in analyzing their problems regarding their expansion and many others. The data for the years 2018-19, 2019-20, 2020-21,2021-22 and 2022-23 was done, all taken as financial years. With 2018-19 being the base year a strong comparisonwas also made regarding the performances of all the other years. The monetary value has been calculated in dollar terms after determining the exchange rate for that month, since in modern times we do measure the purchasing power of any currency in dollars. For better understanding the closing balance of each month has been taken for Sales while the monthly expenditure has been taken into consideration for purchases.A month wise comparison has been made for a better analysis. The major conclusions yielded are:

- The sales of the company have shown a rise in several months than in month of April every financial year.
- After converting to dollars, it was noticed that, though the sales show an increase in

all other months except April, the months of June and October in 2019-20 shows a dip in sales.

- Similarly, in the corresponding years too there are instances where this trend has been reflected.

- However, in the year 2022-23 there in no dip in Sales and moreover the sales show a rise comparing all the other years.

- The purchase data of the company shows that the firm had a very high purchasing requirement in the year 2019-20 when compared to the base year.

- The overall analysis of the purchases of the company shows that the purchases have increased, mostly, when comparing to the base year.

- Finally, a comparison between the Credit and Debit records have been done to reflect the company's performance.

- This comparison proved that the as per 2022-23 records the company's credit is higher than (or is better than their debit) even though there were small variations during the previous years. This indicates the good health of the firm.

All comparisons have been made with respect to 2018-19.

The images depicting the same has been displayed below for better understanding.

First the year 2018-19, which is the base year is depicted.

SALES DATA					
			BASE YEAR		
			2018-19		
Exchange Rate	Inflation (18-19)		Credit	Closing Balance (BY)	Closing Balance (CY)
60.01	7.11	April	8879628.33	8879628.33	5483121.57
60.27	6.61	May	11763057.15	20642685.48	21998413.62
59.19	6.97	June	9621747.87	30264433.35	31751412.69
60.06	6.91	July	9058943.92	39323377.27	45018762.12
61.22	4.76	August	6865575.1	46188952.37	56144318.61
60.53	5.14	September	12233555.23	58422487.6	71066468.34
61.68	6.32	October	15404553.67	73827041.27	75972210.86
61.44	6.72	November	17041596.51	90868637.78	124584736.5
61.96	6.32	December	13241678.82	104110316.6	164340371.9
63.28	6.32	January	10814551.19	114924867.8	187485888.4
62.01	5.12	February	14512147.75	129437015.5	203548658.5
61.74	5.93	March	15156382.16	144593397.7	216558733.7

Fig: Sales of 2018-19

Here, the CY and BY indicate the corresponding and base years respectively and Ex

Rate denotes the exchange rates.

Now the image of **CY** is depicted below:

	Ex Rate (CY)	Adjusted to Exchange Rate (BY)	Adjusted to Exchange Rate (CY)	2019-20 Credit	Performance
	62.16	147969.144	88209.80647	5483121.57	Decreased
	63.64	342503.4923	345669.6043	16515292.05	Improved
	63.58	511309.9062	499393.0904	9752999.07	Improved
	63.63	654734.8863	707508.4413	13267349.43	Improved
	63.87	754474.8835	879040.52.94	11125556.49	Improved
	66.3	965182.3492	1071892.433	14922149.73	Improved
	65.52	1196936.467	1159527.028	4905742.52	Improved
	65.4	1478981.735	1904965.39	48612525.67	Improved
	66.46	1680282.708	2472771.169	39755635.36	Improved
	66.52	1816132.55	2818489.002	23145516.55	Improved
	67.87	2087357.129	2999096.192	16062770.09	Improved
	67.71	2341972.752	3198327.185	13010075.2	Improved

Figure: Sales of CY, which is 2019-20

Here, the ones which are highlighted indicates the better performance. The performance is below, i.e. the performance before and after converting to dollars.

The performance is as below:

After adjustment	
Performace	Difference
Dip	-59759.3375
Good	3166.11205
Dip	-11916.8158
Good	52773.555
Good	124565.646
Good	106710.084
Dip	-37409.439
Good	425983.656
Good	792488.461
Good	1002356.45
Good	911739.063
Good	856354.434

Figure: Actual Performance

The ones highlighted denotes the poor performances.

The graphical representation is as follows:

Even though the performance chart shows that except in the month of April all other months the performance improved, after the correction for inflation we observe that the performance in the months of June and October has not improved.
However, they remain more or less the same.
A huge differnce cannot be spotted. This implies that an **increase in the dollar value** has affected the sales by a very small (insignificant margin).
From the graph we can see that the sales trends are almost the same in both the years, indicating no high pressure or so on the firm.

Figure: Comparison Growth

Other Representations:

Similarly, the other comparisons are also shown below.Here,

the corresponding year is 2020-21.

From the graph we observe that the sales of the company has shown significant improvement from the base year (after converting to dollars), even though there is a slight variation in the beginning of the financial year.
The graph shows a rising trend, indicating that the sales in both the years have only increased and not fallen mostly.

Figure: Comparison Growth

For 2021-22:

This graph denotes the improvement in the company's performance from 2014. Though the month of April is the one which has least performance it still has shown good improvement.
This graph can be used to understand that as time progresses the company's sales have been improving which is a very good reflection of the company's good economic and finanacial condition.

Figure: Comparison Growth

For 2022-23:

This graph shows the improvement in sales from the base year to the previous year. We can notice that there is a huge improvement in sales, however in all the cases sales **during the month of April** has shown a smaller value (or a dip).
We also see that unlike the years of 2015, 2016 there is a change in the sales i.e. the sales are good in each month when compared to their base year. There is no dip.
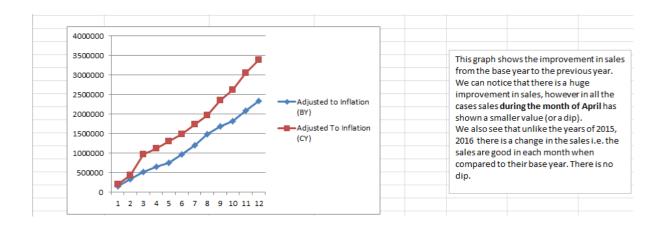
Figure: Comparison Growth

Finally, a complete comparison has been done and the graph is as below.

2018-19	2019-20	2020-21	2021-22	2022-23		Performance
Dollar Strength (CY)	Dollar Strength (CY)	Dollar Strength (CY)	Dollar Strength (CY)	Dollar Strength (CY)	2022 V/S 21	
147969.144	88209.80647	157892.785	237261.3318	208779.5696	Dip	Considerable
342503.4923	345669.6043	286368.636	412597.6535	440974.0122	Good	Considerable
511309.9062	499393.0904	402531.5205	916052.0865	962895.5721	Good	Considerable
654734.8863	707508.4413	1188965.42	1101362.103	1121203.304	Good	Considerable
754474.8835	879040.5294	1467363.372	1264659.178	1305612.887	Good	Considerable
965182.3492	1071892.433	1667994.057	1451858.087	1479254.573	Good	Considerable
1196936.467	1159527.028	1846966.916	1589505.982	1734173.827	Good	Considerable
1478981.735	1904965.39	2009943.528	1776803.776	1968353.934	Good	Considerable
1680282.708	2472771.169	22736542.24	1997206.591	2346406.01	Good	Considerable
1816132.55	2818489.002	2365159.855	2262524.403	2625938.153	Good	Considerable
2087357.129	2999096.192	2798163.423	2467890.094	3046388.544	Good	Considerable
2341972.752	3198327.185	3063686.807	2686780.89	3381851.735	Good	Considerable

Figure: Complete Comparison

The highlight is only to indicate the top ones. We can draw certain conclusions via the same that during the month of April, the sales have gone down than in 2021, while comparing only 2021 and 2022. We can also conclude that the sales during the year 2022-23 is also strong enough to indicate the company's efficiency and financial stability.

Purchases:

Similar analysis has been done with Purchases too. Again, for the comparison study the base year has been taken as 2018-19 and the values are all in dollars.

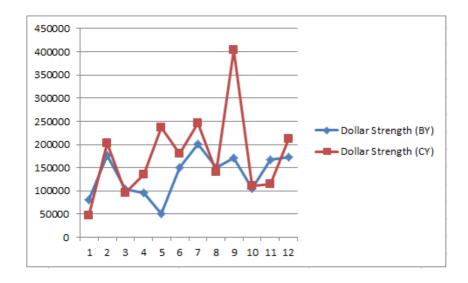Hence the comparison graph for 2018-19 and 2019-20 is:

Figure: Purchase Performance

Thus, we see that the performance during the corresponding year shows a very high rise indicating that the purchases have risen very sharply. This could mean that the demandis increasing as the company expands, hence they must purchase higher quantities of commodities which will further incur higher costs of purchasing.

For 2020-21: fig 2.11

For Purchase have used the monthly data

Ex Rate		Debit (Monthly) (BY)	Dollar Strength (BY)	Performance (In Dollars)	Ex Rate	Debit (CY)	Dollar Strength	
60.01	April	4875704.37	81248.19813	Good	66.394	2911525.39	43852.2365	
60.27	May	10670794.12	177049.8444	Not Good	66.34	12918290.53	194728.5277	The data shows that the purchases of the company has on the average increased from 2018. This could be due to high demand of certain products which lead them to purchase more and hence spend more.
59.19	June	6155162.38	103989.9034	Good	67.47	6064447.03	89883.60797	
60.06	July	5707698.06	9.503326773	Not Good	67.24	8589206.84	127739.5425	
61.22	August	3087646.75	50435.26217	Not Good	66.71	15099467.1	226344.8823	
60.53	September	9118570.3.5	150645.4708	Not Good	66.91	11936637.56	178398.4092	
61.68	October	12341933.06	200096.191	Not Good	66.59	16093387.9	241678.7491	
61.44	November	9259902.97	150714.5666	Good	66.7	9194159.08	137843.4645	
61.96	December	10630731.16	171574.0988	Not Good	68.36	26792109.05	391926.6976	
63.28	January	6677043.75	105515.862	Not Good	68.39	7346689.79	107423.4507	
62.01	February	10317326.22	166381.6517	Good	67.47	7761619.92	115038.0898	
61.74	March	10672816.21	172867.1236	Not Good	66.83	14385038.26	215248.2156	

Figure: Purchases

For 2021-22: fig 2.12

Ex Rate		Debit (Monthly) (BY)	Dollar Strength (BY)	Ex Rate	Debit (CY)	Dollar Strength (CY)	Performance	
PURCHAS 2018-19						2021-22		
For Purchase have used the monthly data								
60.01	April	4875704.37	81248.19813	64.86	22448185.46	346102.1502	Not Good	
60.27	May	10670794.12	177049.8444	64.3	14851991.14	230979.6445	Not Good	
59.19	June	6155162.38	103989.9034	64.415	6660018.58	103392.3555	Good	
60.06	July	5707698.06	95033.26773	64.63	3928488.83	60784.29259	Good	
61.22	August	3087646.75	50435.26217	64.065	10966789.91	171182.2354	Not Good	
60.53	September	9118570.35	150645.4708	64.025	5430248.22	84814.49777	Good	
61.68	October	12341933.06	200096.191	65.31	9004645.93	137875.4544	Good	
61.44	November	9259902.97	150714.5666	64.565	6244766.27	96720.61132	Good	
61.96	December	10630731.16	171574.0988	64.49	8138848.09	126203.2577	Good	
63.28	January	6677043.75	105515.862	63.465	4451779.74	70145.43039	Good	
62.01	February	10317326.22	166381.6517	64	11972216.31	187065.8798	Not Good	
61.74	March	10672816.21	172867.1236	65.21	8662705.59	132843.2079	Good	

The data clearly indicates that the purchases of the firm has decreased from the base year. This could be because of the fact that as the firm expands and as their market share expands too, the purchase money ideallydecline. Thiscan also be due to the strong market connections with various operators who will reduce the amount charged ideally.

Figure: Purchases

For 2022-23: fig 2.13

Ex Rate		Debit (Monthly) (BY)	Dollar Strength (BY)	Ex Rate	Debit (CY)	Dollar Strength	Performance	
PURCHASE DATA 2018-19						2022-23		
For Purchase have used the monthly data								
60.01	April	4875704.37	81248.19813	65.13	11761814.75	180589.8165 Not Good	Not Good	
60.27	May	10670794.12	177049.8444	66.52	10356056.62	155683.3527 Good	Good	
59.19	June	6155162.38	103989.9034	66.995	12756797.71	190414.1758 Not Good	Not Good	
60.06	July	5707698.06	95033.26773	68.51	7912872.62	115499.5274 Not Good	Not Good	
61.22	August	3087646.75	50435.26217	68.38	8985944.17	131411.8773 Not Good	Not Good	
60.53	September	9118570.35	150645.4708	71.005	10149971.63	142947.2802 Good	Good	
61.68	October	12341933.06	200096.191	72.925	7604237.58	104274.7697 Good	Good	
61.44	November	9259902.97	150714.5666	73.455	11450355.2	155882.5839 Not Good	Not Good	
61.96	December	10630731.16	171574.0988	69.62	10222248.82	146829.1988 Good	Good	
63.28	January	6677043.75	105515.862	69.99	10824065.03	154651.5935 Not Good	Not Good	
62.01	February	10317326.22	166381.6517	71.44	22624249.71	316688.8257 Not Good	Not Good	
61.74	March	10672816.21	172867.1236	70.9	11708812.42	165145.4502 Good	Good	

The data represents an increase in purchases on the average, again indicating the high demand by the consumers and cli ents of the firm.

Figure: Purchases

Finally, the overall performance has also been analyzed

Dollar Strength (BY)	Dollar Strength (2019-20)	Dollar Strength (2020-21)	Dollar Strength (2021-22)	Dollar Strength (2022-23)	Performance
81248.19813	46839.21155	43852.2365	346102.1502	180589.8165	Considerable
177049.8444	202990.1089	194728.5277	230979.6445	155683.3527	Considerable
103989.9034	95382.93536	89883.60797	103392.3555	190414.1758	Considerable
95033.26773	134986.749	127739.5425	60784.29259	115499.5274	Considerable
50435.26217	236409.38	226344.8823	171182.2354	131411.8773	Considerable
150645.4708	180039.7822	178398.4092	84814.49777	142947.2802	Considerable
200096.191	245625.5784	241678.7491	137875.4544	104274.7697	considerable
150714.5666	140583.4722	137843.4645	96720.61132	155882.5839	considerable
171574.0988	403131.3429	391926.6976	126203.2577	146829.1988	considerable
105515.862	110443.3222	107423.4507	70145.43039	154651.5935	Considerable
166381.6517	114360.099	115038.0898	187065.8798	316688.8257	Considerable
172867.1236	212450.7201	215248.2158	132843.2079	165145.4502	Considerable

The analysis shows clearlythat the performance of the firm is considerable i.e. their purchases keep fluctuating. This reflects the demand preferences and various choices of the clients.

Figure: Overall Performance

This shows that the purchases of the company is considerable as they keep fluctuating. However, looking at the trend we can say that the purchases of the company has been increasing. Also, a total comparison of the credit and debit of the company has been done to understand their overall and total performance. The results are as shown below:

2018-19					2019-20					2020-21			
Sales	Purchases												
Credit	Debit	Performance	Diff		Credit	Debit	Performance	Diff		Credit	Debit	Performance	Diff
8879628.33	4875704.4	Considerable	4003923.96		5483122	2911525.39	G	2571596.18		10483134	22448185	Not G	-11965051.89
11763057.2	10670794	Considerable	1092263.03		16515292	12918290.53	G	3597001.52		8514562	14851991	Not G	-6337429.4
9621747.87	6155162.4	Considerable	3466585.49		9752999	6064447.03	G	3688552.04		8161106	6660019	G	1501087.8
9058943.92	5707698.1	Considerable	3351245.86		13267349	8589206.84	G	4678142.59		52787233	3928489	G	48858744.33
6865575.1	3087646.8	Considerable	3777928.35		1112.556	15099467.1	Not G	-3973910.61		17941776	10966790	G	6974985.78
12233535.2	9118570.4	Considerable	3114964.88		149221.5	11936637.56	G	2985512.17		13717672	5430248	G	8287423.62
15404553.7	12341933	Considerable	3062620.61		4905743	16093387.9	Not G	-11187645.4		11384045	9004646	G	2379398.62
17041596.5	9259903	Considerable	7781693.54		48612.53	9194159.08	G	39418366.59		11073706	6244766	G	4828940.11
13241678.8	10630731	Considerable	2610947.66		39755635	26792109.05	G	12963526.31		21363769	8138848	G	13224921.36
10814551.2	6677043.8	Considerable	4137507.44		23145517	7346689.79	G	15798826.76		6326280	4451780	G	1874500.01
14512147.8	10317326	Considerable	4194821.53		16062770	7761619.92	G	8301150.17		27038804	11972216	G	15066587.31
15156382.2	10672816	Considerable	4483565.95		13010075	14385038.26	Not G	-1374963.06		15954103	8662706	G	7291397.58

Figure: Credit and Debit

2021-22					2022-23			
Credit	Debit	Performance	Diff		Credit	Debit	Performance	
15388770	9922234	G	5466536		13597813	11761815	G	
11141259	6460917	G	4680343		15735778	10356057	G	
32477466	13693959	G	18783507		35175598	12756798	G	
12173538	13395489	Not G	-1221951		12304450	7912873	G	
9839358	6913764	G	2925594		12464171	8985944	G	
11934824	7392058	G	4542766		15756662	10149972	G	
10855422	6144825	G	4710597		21430155	7604238	G	
10908700	6762.23	G	4146470		18120812	11450355	G	
14080517	7543580	G	6536937		18771348	10222249	G	
14791258	8788507	G	6002752		20432625	10824065	G	
14353855	10204541	G	4149314		33844586	22624250	G	
17260016	17606173	Not G	-346158		22139290	11708812	G	

As per 2022-23 records the company's credit is higher than (or is better than their debit) even though there were small variations during the previous years. This indicates the good health of the firm.

Figure: Credit and Debit

The notations like "NotG" and "G" indicates Not good and good performance of the company. Finally, after the comparison we see that as per 2022-23, the credit is higher than their debit and during the previous period there have been certain fluctuations due to the expansion of the company. This strong economic strength of the company seems to be continuing and promises to grow even in the future.

Future Sales:

Sales play a very important role in the success of any firm and it is very important to understand the trend that would cover or envelope the same.

An analysis which involved the future forecasting of the sales of the company based on the trend of global demand was analyzed. It was found out to be as follows:

	Demand (x)		Sales (y)
2018	6.3		144593397.70 cr
2019	6.9		216558733.73 cr
2020	7.5		204746189.30 cr
2021	8		175204981.81 Cr
2022	6.5		239773288.02 cr
2023	6	(expected rate currently)	
Future prediction of sales for 2024:	198480277.10Cr		

Figure: Future Sales Prediction
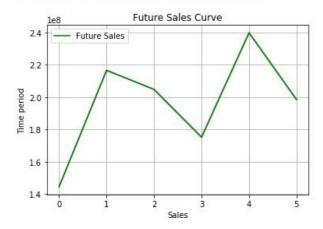
Though several times the firm experienced a high sale the previous year, it is not completely necessary that the trend needs to continue in the same way. There are chances thatit might happen the opposite way too. This may and can depend on the previous year'ssales and the demand rate. Thus, we can try to find out the relation between them ortheir trend.

This prediction data shows that the future sales (for 2023-24 financial year) is expectedto be less. This, however, need not be a hundred percent accurate as the rate is only six percent (i.e. the global demand) as of now, which could increase in the future. The variables x and y denote the independent and dependent variables respectively. The following prediction has been done using the excel.

Based on the sales value obtained the graph for the same has been plotted using python. The plot is shown below:

```
s=[144593397.70,216558733.73,204746189.30,175204981.81,239773288.02,198480277.10]
plt.plot(s,color="green")
plt.plot(s,label="Future Sales",color="green")
plt.title("Future Sales Curve")
plt.xlabel("Sales")
plt.ylabel("Time period")
plt.grid(True)
plt.legend(loc="best")
```

<matplotlib.legend.Legend at 0x1382060e630>

2.5 Technologies used

During my internship at Tentacles Aerologistix Pvt. Ltd., I utilized Excel and R-Programming extensively for data analysis, aiming to enhance operational insights and support decision-making processes. This report highlights how these technologies facilitated comprehensive data exploration, analysis, and visualization.

Excel Utilization:

Data Organization and Management: The company's datasets were structured and arranged using Excel as a key tool. Ensuring data integrity and accessibility, it made the smooth input, modification, and management of massive volumes of data possible.

Data Analysis and Insights: Excel's built-in functions made it possible to perform simple statistical calculations like percentages, sums, and averages. These abilities were crucial for obtaining early insights, seeing patterns, and contrasting important measures between various datasets.

Visualization and Reporting: The ability to chart data in Excel was essential for producing visual representations of data trends and patterns. This made it easier to convey findings to stakeholders in a clear and effective manner using tables, charts, and graphs that are easy to understand. Excel additionally

made it possible to create thorough reports that highlight ideas that may be put into practice and summarize data that had been analyzed.

R-Programming Integration:

Advanced Statistical Analysis: R-Programming offered sophisticated statistical features that were necessary for in-depth investigation. With the use of intricate statistical tests and regression models, I was able to identify trends, make more accurate predictions, and evaluate the dependability of the data.

Data Visualization and Exploration: Using the ggplot2 program in R, I produced unique, eye-catching graphs and charts. These visualizations improved data exploration and made it easier to successfully communicate difficult insights to stakeholders who are not technical.

Data Manipulation and Advanced Analytics: Efficient data transformation, purification, and manipulation were made possible via R's dplyr and tidyr packages. This ensured data accuracy and consistency across analyses and expedited the data preparation process. Furthermore, R's vast package library enabled complex analytics operations like machine learning and clustering, enabling more in-depth investigation and the extraction of useful insights from the data.

2.6 Challenges faced and how they were addressed

During my internship at Tentacles Aerlogistix Pvt. Ltd., I encountered various challenges that prompted me to adopt specific strategies and approaches to enhance my learning and contribute effectively to the organization. This report outlines how I addressed these challenges and leveraged opportunities for growth during my tenure.

Inability to Correlate Theoretical Concepts: I had trouble at first connecting theoretical ideas with real-world data analysis applications. I conducted proactive research and self-study to get over this. I made time to study pertinent theoretical frameworks by consulting scholarly books, internet sources, and mentorship conversations. By using this strategy, I was able to close the knowledge gap between theory and practice and make better-informed analyses and decisions.

Limited Data Availability: To optimize insights from the available datasets, a strategic strategy was

necessary due to the constraint of limited data availability. I concentrated on methodical data analysis strategies, making sure that the available data was carefully examined and interpreted. Furthermore, in order to ensure the accuracy and dependability of my conclusions, I was open and honest about the limitations of the data and the assumptions I made when doing my analysis. Despite the limitations of the data, this method allowed me to derive valuable insights.

Analyzing Data Precision: To arrive at trustworthy conclusions, it was critical to guarantee the correctness and precision of the data analysis. I put strict quality assurance procedures into place by verifying results several times, asking managers for input, and double-checking analytical procedures. I tried to keep my analytical results as accurate as possible by following best practices in data analysis and paying close attention to every little detail.

Understanding the Working Environment: I actively engaged with colleagues across departments to obtain a thorough understanding of the working environment and operations of the organization. I watched day-to-day operations, took part in team activities, and asked questions about organizational procedures. Through this thorough approach, I was able to gain a deeper understanding of the company's dynamics, culture, and business objectives, which made it easier for me to integrate and effectively contribute to team projects.

Generating Solutions: In order to tackle the problem of coming up with workable ideas, I had to use my analytical abilities and promote teamwork. I used critical thinking to evaluate data findings and pinpoint tactical areas that needed development. My recommendations were improved by working with colleagues and getting feedback from stakeholders, making sure they were well-researched and in line with company objectives. Through this process, I was able to provide practical answers targeted at resolving particular issues the organization was facing.

Chapter 3

Methodology, Result and achievements

3.1 Approach/ Methods used to accomplish the assigned tasks

Approach:

Data-Centric Approach: I used a data-centric approach to get deeply into the several datasets that Tentacles Aerologistix Pvt. Ltd. offered throughout my internship. Important data like sales records, purchase transactions, inventory logs, invoices, balance sheets, debtor's lists, and extensive customer information were included in these datasets. Using this method, I was able to glean insightful information that fueled thoughtful decision-making.

Problem-Solving Approach: My methodology was based mostly on a problem-solving approach. Through a rigorous data analysis process, my objectives were to pinpoint underlying problems, identify new patterns, and find ways to improve the business's operational and financial performance. This proactive approach made it easier to implement focused treatments and provide tactical recommendations.

Structured Analysis: I used a methodical approach while conducting an organized study of the data, which included careful data gathering, rigorous data cleaning, transformation to guarantee data accuracy, and thorough statistical analysis. I was able to get insightful conclusions from this meticulous methodology, which served as the foundation for my strategic recommendations.

Comparative Analysis: Comparative study between several financial years was a crucial component of my work. Using a comparison method, I was able to pinpoint the company's financial landscape's patterns, variations, and areas in need of development. These realizations were crucial in developing specialized tactics to maximize results.

Methods Used:

Data Analysis: I used sophisticated tools like Excel and R-Programming to examine and understand the data that was gathered. These tools made it easier for me to evaluate, clean, convert, and model data, which helped me find hidden connections and patterns in the datasets.

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Statistical Analysis: I used a variety of statistical methods and instruments, such as comparison, trend, and correlation analysis. With the help of these approaches, the data was thoroughly understood, performance measures were revealed, and evidence-based decision-making was encouraged.

Economic Analysis: I used economic ideas and principles to understand financial data. I was able to identify industry trends, assess financial stability metrics, and provide strategic suggestions with the goal of supporting the company's development trajectory and economic resilience thanks to this technique.

Data Visualization: I used data visualization methods including charts, graphs, and dashboards to clearly convey my results. Along with making the study results more understandable, these visual aids helped stakeholders engage in fruitful dialogue and synchronize their strategies.

Recommendation Generation: I produced actionable insights and strategic suggestions based on the knowledge gained from the data analysis. The above-mentioned recommendations were formulated with the aim of tackling recognized obstacles, streamlining operating procedures, and harnessing expansion prospects. Every suggestion was supported by thorough analysis and intended to produce observable gains in performance indicators.

Reporting and Communication: I communicated often with the director of the firm and my mentor during the internship. I offered well-organized reports with progress updates, important discoveries, and tactical suggestions. This continuous communication promoted feedback loops, guaranteed transparency, and successfully matched project results with corporate goals.

3.2 Development Process, Tools, and Techniques

Development Process:

Data Collection: I painstakingly gathered a wide variety of datasets from Tentacles Aerologistix Pvt. Ltd.

for the internship assignment. These contained vital information including balance sheets, debtor's lists, inventory logs, invoices, sales records, purchase transactions, and thorough customer data. These datasets served as the basis for the data analysis stage that followed.

Data Analysis: To get significant insights from the gathered datasets, I employed resilient technologies like Excel and R-Programming. Numerous data manipulation activities, such as data inspection, cleaning, transformation, and modeling, were made easier by these technologies. I was able to find hidden patterns, trends, and correlations in the operational and financial data of the organization by utilizing these skills.

Statistical Analysis: The project's use of statistical concepts and methods was essential. Statistical approaches played a crucial role in performing comprehensive analyses, including trend, comparison, correlation, and forecasting analysis. I was able to obtain practical insights that aided in well-informed decision-making processes thanks to this rigorous statistical technique.

Recommendation Generation: I developed strategic suggestions aiming at improving Tentacles Aerologistix financial performance, maximizing operational efficiency, and supporting overall organizational stability based on the insights gained during the data analysis phase. The proposals have been carefully prepared to conform to the operational realities and strategic objectives of the organization.

Tools and Techniques:

Excel: Excel was a flexible program that could be used to manipulate data, calculate financial indicators, and create visual representations like graphs and charts. Because to its versatility, I was able to efficiently complete both simple and complicated data analysis jobs.

R-Programming: I turned to R-Programming for more complex data modeling and statistical analysis. This programming language was very helpful in managing big datasets and carrying out complex statistical calculations, which improved the breadth and precision of the analysis that was done.

Statistical Concepts: The utilization of diverse statistical principles played a crucial role in deciphering the intricacies encapsulated in the information. Long-term patterns were identified with the use of techniques like trend analysis and correlation analysis, which revealed correlations between various variables and offered crucial information for strategic decision-making.

Economic Concepts: Economic concepts and principles were essential in understanding the financial data. With the use of these ideas, I was able to identify market trends, evaluate financial performance metrics, and provide suggestions that were both economically solid and data-driven.

Data Visualization: I used data visualization approaches to provide the analysis results in an efficient manner. The utilization of visual aids like charts, graphs, and dashboards enabled stakeholders to better comprehend and make decisions by presenting essential data in a clear and simple manner.

Data Cleaning and Transformation: Strict methods for data transformation and cleansing were used before statistical analysis could begin. This methodical procedure guaranteed the dataset's reliability, precision, and completeness, strengthening the validity of the conclusions drawn from the study.

3.3   Internship Accomplishments and Key Project Outcomes

During my internship at Tentacles Aerologistix Pvt. Ltd., I had the opportunity to contribute significantly to the company's operations and strategic initiatives. Here's a summary of my accomplishments and the key outcomes of the project:

Accomplishments:
1. **Data Analysis Proficiency:** I showed that I was proficient in data analysis using R-Programming and Excel. I examined a variety of datasets that included customer data, invoices, sales, purchases, and inventory.

2. **Strategic Recommendations:** As part of my strategic advice, I suggest that the corporation put any excess cash in short-term liquid funds to improve its financial performance. The director of the firm accepted these proposals with gratitude.

3. **Understanding Company Operations:** I obtained a thorough grasp of Tentacles Aerologistix business operations, including all facets of sales, operations, and adherence to aviation industry rules pertaining to dangerous commodities.

4. **Professional Growth:** The internship helped me advance professionally by giving me hands-on experience in a real-world corporate setting. It strengthened the concepts of work ethics and productive cooperation and improved my abilities in data analysis, statistics, and economics.

Key Outcomes of the Project:

My internship in Tentacles was also to provide certain valuable and effective recommendations regarding a few aspects of the firm. That was also made possible by analysing the data and understanding different concepts. Finally, i also recommended the following to the company for improving them

performances in various fields which was appreciated by the director of the firm. They are:

1. To invest their surplus amount in Short Term Liquid Funds, since it can help in yielding interest.

Generally, the surplus amount is used to invest in the business for its further expansion. I suggested that the surplus amount could be utilised and the remaining amount should be invested in Short Term Liquid Funds. Companies tend to put their money in current account which won't earn them any profits or interest, while the Short-Term Liquid Funds will earn them.

The number of clients that the firm lost during last two years and the number had come up to eighty-six, of which few had stopped their business.

Tentacles, in its path of expansion has definitely seen a huge and good rise in the number of customers and clients they have. However, there are many clients who have discontinued the services of Tentacles over the past few years. The reason behind this is very crucial and important to understand the various areas where Tentacles need to focus for further improvement. This will help in understanding and catering to the customer needs in a better manner. Analysis of this should be done as it is also important in getting a good understanding of how the clients consider the service quality of Tentacles to be. Also, Tentacles should ensure that they do keep a regular check and track regarding their customers and their needs to further keep up with the customer confidence.

2. To introduce an application, so that customers will be able to view the product details in an efficient manner. This will also help in reducing the time involved, man power and resources.

Till recently, Tentacles has been depending upon the service and responsibility of their sales team to ensure that the company gets the orders. In a world of digitalisation, where we rely on our internet for daily life, it is important that these are also made digital. Digital platform will mainly help the clients and customers to get a really good idea about the products and other related aspects. It will also help Tentacles to reduce their dependency on man power and switch to a better and efficient method of sales.

3. Apply an effective method to collect the outstanding from debtors who are long overdue. Like allow them to make their payments through other means.

Tentacles generally gives 35-40 days for their borrowers to repay. If it doesn't happen so, then they mail the respective debtor or try contacting them through phone calls. This method must be restructured and organised. Tentacles should develop a method to collect the money by asking the debtor to pay the greater amount before the delivery and the rest amount after or they could give some other mode of payment too. This might not get them the entire amount that is to be repaid yet, is a better way since, they will get higher amount from their clients than they did before.

4. Expand their network of business, so that they can attain more customers.

In any field of work, expansion of business is a very important aspect as it reflects the strength of the company and helps in gaining more customers throughout. One among the major difference between Tentacles and their competitors is the area of approach and working sphere. Brid Execujet, one among their major competitors, located in Delhi, have an advantage in this area as they have a wider and larger approach base. They have their services located in other continents like Africa, Europe and so on. Tentacles should also try and expand their area of business.

5. Performance Appraisal: A small change in the way the performance of the non-sales staff is assessed. By providing them an incentive for their performance at the end of each year would ensure that their performance also would be smooth and efficient.

The success of any company remains with the unity and co-operational working of the staff and members. This ensures the smooth functioning and movement of the company. Tentacles had a different way of performance evaluation of their sales and non-sales team. A different way of analysing the same will help in increasing the effective and quality of work contributed by the employees. Providing them with their incentives at the end of each financial year would ensure that the reports provided and maintained by the staff would exact and precise. This would also ensure that there is good value added to the success of the firm by the employees, mainly the members in the non-sales department.

6. To use more of indigenous commodities for sale than using imported ones.

The main reason why Tentacles prefer using the imported commodities is due to the fact that they have a better and promising delivery, and they are slightly cheaper than the Indian ones. This practise should be minimised, as certain unexpected government policies, like "Make in India", will harm these companies in their growth process. Thus, using Indian products should be encouraged than the imported ones.

3.4 Detailed Technical Aspects of the Project

Data Analysis Tools: For data analysis during my internship at Tentacles Aerologistix Pvt. Ltd., I used R-Programming and Excel a lot. With the use of these tools, I was able to examine, purify, convert, and analyze several datasets that were essential to comprehending the operational and financial patterns of the business.

Data Sets Analyzed: Analyzing a variety of datasets was part of the project, including debtor's lists, client databases, inventory reports, invoices, sales records, and buy transactions. These databases provide thorough insights on the company's client relationships, operational effectiveness, and financial stability.

Statistical Analysis: A thorough study of the data was carried out using statistical techniques. To find patterns, correlations, and trends in the datasets, statistical principles have to be used. With the use of statistical methods, significant insights were obtained that served as the foundation for strategic suggestions meant to boost business performance.

Recommendations and Conclusions: The project's main goal was to use data analysis to produce practical suggestions. These suggestions, which attempted to maximize profitability, enhance financial management procedures, and optimize sales methods, were supported by statistical data. Key areas for operational improvement and strategic investment were identified by the conclusions gained from the data analysis.

Metrics and Measurement of Success:

1. **Financial Metrics:** Financial criteria like profitability, revenue growth, cost-cutting efforts, and the wise use of excess cash were used to gauge success.

2. **Data Accuracy and Completeness:** Determining the completeness and correctness of the datasets under analysis was essential to producing trustworthy conclusions. Strict procedures for data validation and cleaning were used to guarantee data integrity during the analysis.

3. **Implementation of Recommendations:** One key indicator of the project's effectiveness was the company's ability to successfully implement the tactics that were advised. This involved monitoring the implementation of suggested budgetary plans and operational enhancements.

4. **Stakeholder Feedback:** Insights on the efficacy of the recommendations and the perceived value of the insights obtained from the data analysis were obtained through qualitative feedback from stakeholders, which included the director of the firm. Positive stakeholder input showed that the project's results and strategic goals were in line.

3.5 Information Technology and SWOC analysis

During my internship at Tentacles Aerologistix Pvt. Ltd., Information Technology (IT) played a pivotal role in enhancing operational efficiency, data analysis capabilities, and decision-making processes. This report outlines the strategic use of IT tools and systems that contributed to achieving optimal outcomes during my internship.

Role of Information Technology:

1. Data Analysis Tools: Thorough data analysis was made possible by IT technologies like R-Programming and Excel. Excel made it easier to organize data, do simple statistical analysis, and visualize patterns using graphs and charts. R-Programming, in the meanwhile, made it possible to use tools like ggplot2 for complex data visualizations, predictive analytics, and advanced statistical modeling. Through the efficient use of these technologies, I was able to extract valuable insights from huge datasets, spot important trends, and create well-informed suggestions to improve business operations**.:**.

2. Data Management Systems: IT tools like databases and data warehouses made effective data management easier. These systems made sure that data was efficiently organized, stored, and retrieved, which preserved data integrity and made data processing jobs easier. Throughout the internship project, having access to current and correct information was essential for producing reports and assisting with decision-making processes.

3. Communication Technology: Collaboration inside the firm was greatly aided by IT communication technologies including email, messaging apps, and video conferencing. I made efficient use of these tools to share discoveries, ask mentors for advice, and collaborate with team members. Clear project objectives, input on analysis, and alignment with company goals were all ensured by seamless communication.

4. Research and Information Retrieval: Having access to IT resources, including academic publications, research portals, and online databases, was crucial for obtaining pertinent data and being current with industry developments. These sources improved the caliber of my analysis, offered proof to back up suggestions, and increased my comprehension of the workings of the aviation logistics sector.

5. Specialized Software Applications: The effectiveness of carrying out operations was improved by the use of specialist software programs linked to aviation, logistics, and data analysis. These technologies, which included inventory management systems and analytics tools tailored to the aviation industry, allowed me to precisely tackle difficult problems and provide the best results in line with business goals.

SWOC Analysis of the company

The SWOT Analysis for the company has been done and the following was concluded:

Strengths:

The following appear as the strengths:

- Good knowledge in many fields of aviation. A lot of new topics related to Aviation field was introduced and taught to me.

- In depth understanding of several concepts. The in-depth understanding of many concepts helped me to do my analysis smoothly.

- Knowledge regarding new areas and aspects through internship.

- Capability to reflect theoretical concepts through application.

  This was the major part of my analysis. The good and thorough understandingof various theoretical concepts helped me to present my report and complete my analysis successfully.

- Data Analysis, computation and reasoning skills.

Weakness:

- Inability to relate to several concepts and topics introduced newly.

- Lack of proper basics in many areas of aviation and related commodities.

Opportunities:

- Ability to work in different areas and fields due to experience.
  This opportunity reflects my ability to comprehend and learn.

- Fast learning capacity.

  As an intern, the best opportunity that I could furnish was learning components really quick. The very ability to adapt to a new environment by learning new ideas and culture in the work space also stood as my strong opportunity.

Challenges:

- Inability to correlate to several concepts and aspects in theoretical field.

  Being new to this field, a lot of factors do pose as a threat to me including the lack of awareness regarding many concepts in theory that could help me connect many other ideas in internship.

- One among the other threat is regarding the information analyzed. Since a lot of other corresponding data could not be obtained, the analysis has a chance of only depicting one side or part of the transactions taken place. This side mostly depicts that of the company'.

Chapter 4

Internship Experience

4.1   Skill acquired during the internship

The following appear as the skills acquired:
- Good knowledge in many fields of aviation. A lot of new topics related to Aviation
- field was introduced and taught to me.
- In depth understanding of several concepts. The in-depth understanding of many
- concepts helped me to do my analysis smoothly.
- Knowledge regarding new areas and aspects through internship.
- Capability to reflect theoretical concepts through application.
  This was the major part of my analysis. The good and thorough understanding of various theoretical concepts helped me to present my report and complete my analysis successfully.
- Data Analysis, computation and reasoning skills.

4.2 Lessons learned, personal and professional development

The Learning Outcomes are:

- Learning about the company's working structure and operations.

  The initial few days were spent in understanding about the firm's working structure and operations. The knowledge of the same has helped me throughout the internship to cater and fulfil the needs that were required.

- Learnt a lot of new aspects, terms and divisions about the company.

  Tentacles has mainly four division in their firm which mainly includes sales and operations. Tentacles also has a DGR training academy in the office, for training regarding the dangerous goods and other similar regulations. Tentacles being a company related to aviation and aeronautics, a large number of details and information regarding the working of Tentacles with the same was equipped to me.

- Learnt new terms and types like the one regarding the high sea sales, Consumables, Avionics and many others.

  High Sea sales (HSS) is a sale carried out by the carrier document consignee to another buyer while the goods are yet on high seas or after their dispatch from the port/ airport of origin and before their arrival at the port / airport of destination. Consumables are goods that are intended to be consumed. John Locke specifies these as "consumable commodities". People have, for example, always consumed food and water. Consumables contrast with durable goods.

  Avionics are the electronic systems used on aircraft, artificial satellites, and space-craft. Avionic systems include communications, navigation, the display and management of multiple systems, and the hundreds of systems that are fitted to aircraft to perform individual functions.

- Getting a good exposure to the working world outside.

  The main aim of the internship, which is to get a good understanding about the actual working environment and its surrounding was accomplished during my tenure in Tentacles. The experience of working with Tentacles has helped me to know what are the requirements and necessities to be done and learnt while working in a firm. This was a good exposure to the working world.

- Requirements for the smooth and steady functioning of a company.

The backbone and main strength of a company's pathway to success is the co- operative, helpful and understanding nature of its employees. Tentacles, as mentioned earlier has no such barriers among its employees and staff, which is a strong reason behind their successful uprising.

A lot about the company's different policy aspects and similar laws was also learnt which are important for its smooth functioning.

- Analysing a Balance Sheet, understanding the Profit and Loss statement of the company.

A new aspect that was learnt by me during my internship is how to analyse a Balance Sheet. The three major components of any Balance Sheet being equity, assets and liabilities. Also, how to analyse the profit and loss was also learnt.

- Learning about a new software Tally, this was helpful in understanding the ways to maintain accounts and records.

Another new aspect that i learnt during my tenure in the firm is regarding the software Tally. Tally is a very easy, effective and efficient software that is mainly used by companies to record and maintain their accounts and records regarding various transactions taking place. There are many applications of Tally. One can also generate e way bills using Tally which is very simple and less tedious process.

- Learnt and understood the flow of goods and how the company helps in fast and regular distribution of the same.

Tentacles is the major distributor to many important and famous aviation related companies. The way they distribute these goods to the required places and howthe get the tender was understood by me. Initially, the quotation is given before which the tender has to be downloaded from the portal of the demanding company. Once, this has been fulfilled the demanding company will give the order to the one which has quoted the least price.

Generally, the demanding company will give the order only if there are at least three bidders. In the absence of such three bidders, the company will wait for as muchas upto six or seven months to fully confirm their order. Thus, getting a simpleorder might take a really long time to be completed and at times could be quite tedious: - the entire process of getting the order, confirming it and finally receivingthe payment.

- Understanding the nature and working aspects of their United States's branch.

As a part of their expanding nature in the market, Tentacles had started a new branch in the United States. The functioning of this one however, is slightly different from the Indian one. The US branch is only formed as a supporting entity for the Indian branch. It is headed by only one person who is a retired army colonel. All the transactions, records and accounts are balanced and maintained by the colonel. The US branch also helps in getting quotations and at times helps in delivery of certain items and products.

- Learnt to analyse data in a more effective and efficient manner using different software's.

It is very important and necessary to understand the application and use of accounting software like Tally software. This was very helpful in learning more about the different types of handling the accounting data and simpler and easier ways to generate e-way bills.

Analysis using the same could also be accurate and absolute.

- Learnt about the Dangerous Goods Regulation training programme, which is very important to understand the nature of the goods being transported.

The need to understand the nature of the good which is being transported is very crucial and important during its transportation be it within regions or abroad.

- Declaring the goods and the importance of doing the same.

- Storage requirements and needs of certain goods.

- Attended a meeting along with the director of the company to find ways and methods to decrease the company's outstanding and to increase their customer base.

- I also learnt about the various performance appraisals.

Performance appraisal is very important to any firm for their success and better performance. Assessing the performance of the company's staff and providing incentives accordingly will not only be a fruit for the hard work committed by the employee but, will also help the company in many ways. This will also help in understanding the level of commitment furnished by the employee. The different methods to do the same was analysed by me and a small recommendation regarding the same was provided by me.

- Understood about OEMs

OEMs are the Original Equipment Manufacturer. Thus, understanding their importance and need in this field will help in establishing a good and smooth relationship with them. OEMs generally do not support or encourage the proper functioning of firms and companies such as Tentacles. Their support and help is definitely very important and pivotal in the smooth functioning of any firm like Tentacles.

Personal Development:

- **Exploration of Different Fields:** My exposure to a wide range of topics throughout the internship really expanded my understanding in several different areas.

- **Skill Enhancement:** Practicing in real-world situations strengthened my abilities, enhancing my academic studies and adding a significant amount of value to my educational experience.

- **Adaptability and Learning Capacity:** My ability to quickly adjust to a new setting and absorb new concepts demonstrated my good ability to pick up new skills and adapt to various work cultures.

Professional Development:

- **Data Analysis Proficiency:** I enhanced program efficacy at Tentacles Aerlogistix by utilizing Excel to analyze DGR training data, demonstrating my developing proficiency in data analysis and program optimization.

- **Introduction to Specialized Topics:** I was exposed to advanced ideas through a mentorship in consumables, avionics, and aircraft equipment, which expanded my professional knowledge base and equipped me for specialized tasks.

- **Expertise in Data Analysis:** I strengthened and expanded my professional abilities in this crucial field as a Data Analyst intern by showcasing my ability in data analysis approaches.

4.3 Challenges Faced and how they were addressed

During my internship at Tentacles Aerologistix Pvt. Ltd., I encountered various challenges that prompted me to adopt specific strategies and approaches to enhance my learning and contribute effectively to the

organization. This report outlines how I addressed these challenges and leveraged opportunities for growth during my tenure.

Challenges Faced and Strategies Employed:

1. Inability to Correlate Theoretical Concepts: Early on, I faced challenges in correlating theoretical concepts with practical applications in data analysis. To overcome this, I engaged in proactive self-study and research. I dedicated time to understanding relevant theoretical frameworks, leveraging online resources, academic literature, and discussions with mentors. This approach helped me bridge the gap between theory and practice, enabling more informed analysis and decision-making.

2. Limited Data Availability: The challenge of limited data availability required a strategic approach to maximize insights from the available datasets. I focused on meticulous data analysis techniques, ensuring thorough examination and interpretation of the data at hand. Additionally, I communicated transparently about data limitations and assumptions made during analysis to maintain accuracy and reliability in my findings. This approach enabled me to extract meaningful insights despite data constraints.

3. Analyzing Data Precision: Ensuring the precision and accuracy of data analysis was paramount to deriving reliable conclusions. I implemented rigorous quality assurance measures by double-checking analytical processes, validating results through multiple methods, and seeking feedback from supervisors. By adhering to best practices in data analysis and maintaining meticulous attention to detail, I aimed to minimize errors and uphold the integrity of my analytical outputs.

4. Understanding the Working Environment: To gain a comprehensive understanding of the company's operations and working environment, I actively engaged with colleagues across departments. I sought clarification on organizational processes, participated in team activities, and observed day-to-day operations. This immersive approach allowed me to grasp the company's culture, dynamics, and business objectives more deeply, facilitating integration and effective contribution to team initiatives.

5. Generating Solutions: Addressing the challenge of generating practical solutions involved leveraging my analytical skills and fostering a collaborative approach. I applied critical thinking to analyze data insights and identify strategic opportunities for improvement. Collaborating with colleagues and seeking input from stakeholders helped refine my recommendations, ensuring they

were well-informed and aligned with organizational goals. This process enabled me to propose actionable solutions that aimed to address specific challenges faced by the company.

Chapter 5

Conclusion: Summary of the internship experience

Internship enhances the knowledge and skills of an individual. Through this internship the knowledge gained in many different _elds is immense. It added value to my course and also furnished my knowledge in many aspects. Internship plays a very crucial role as it helps an individual to explore the different horizons of a working environment. It also helps in sharpening the skills to be able to enhance one's knowledge. This internship proved to be very useful in understanding the nature of work. It also played a vital role in understanding. Overall, my internship in Tentacles was very smooth and fruitful as it helped me in a variety of aspects, especially from the view point of a student. The role I was equipped with was that of a Data Analyst. This role helped me to display my expertise and ability in the same. It also helped me to think from the perspective of a Data Analyst.