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NAAC Accredited Autonomous Institution
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Thalavapalayam, Karur – 639 113.

A Project Report

on

GLOBAL SALES DATA ANALYTICS

Submitted in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

Under the Guidance of

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CHAPTER 1

INTRODUCTION

1.1 Project Overview:

Global sales data analytics refers to the technology and processes used to gather sales data and gauge sales performance. Sales leaders use these metrics to set goals, improve internal processes, and forecast future sales and revenue more accurately. In sales, many tasks are now managed through centralized cloud software, including CRMs, email marketing platforms and integration tools, making sales data readily available. Many global, industry-leading brands are now using their sales data in ingenious ways to make better business decisions, but any company can take advantage of insights and reporting tools to achieve data-driven sales success.

1.2 Purpose:

Sales analytics enables your agents to spot key trends, dive deep, predict outcomes, and increase productivity. Accurate analysis also gives your team the ability to tailor their efforts and prioritize high-value prospects. Plus, it may even help spotlight new opportunities for your business to pursue. Sales analytics allows you to better gauge team performance and uncover areas for improvement, too. Understanding those strengths and weaknesses leads to better training, more attainable goals, and a cohesive team.

CHAPTER 2

LITERATURE SURVEY

2.1 Existing problem:

Emphasize the value of risk management and analysis to all aspects of the organization to get past this challenge. Once other members of the team understand the benefits, they are more likely to cooperate. Implementing change can be difficult but using a centralized data analysis system allows risk managers to easily communicate results and effectively achieve buy-in from multiple stakeholders.

S.No.	Author	Year	Title	Algorithm used	Disadvantages
1	Kiran Singh, Rakhi Wajgi,	2022	Data Analysis and Visualization of Sales Data	Visualization Toolkits, Visualization Techniques, Visualization Methods, Visualization Tools	The pixel-oriented visualization techniques fail to help us in understanding the distribution of data in a multi dimensional collocation.
2	Aamod Khatiwada, Pradeep Kadariya, Sandip Agrahari, Ricardo, Rabin Dhakal	2019	Big Data Analytics and Deep Learning Based Sentiment Analysis System for Sales Prediction	Data Pre processing and Training using Deep Learning (RNN, LSTM), data scrapping, data filtration and analysis,	There were problems in the analysis of positive and negative comments of non-English language and those with special characters.
3	Wenhui Shan	2020	Research on Refined Sales Management, Data Analysis and Forecasting under Big Data	Regression equation model, E views 3.0 software	We can know that the standard error of the regression model is slightly larger than the Bootstrap model in the application process.

4	Manpreet Singh, Bhawick Ghutla, Reuben Lilo Jnr, Aesaan FS Mohammed, Mahmood A Rashid	2017	Walmart's Sales Data Analysis	Map Reduce algorithm, Streaming algorithm, Data Visualization Algorithms	Retailers need to plan and evaluate according to the market driving factors which are not limited to unemployment rate, fuel prices
5	Muhammad Shahbaz, Changyuan Gao, Lili Zhai, Fakhar Shahzad, AdeelLuqman, RimshaZahid	2022	Impact of big data analytics on sales performance in pharmaceutical organizations	Data fusion and data integration, Data mining, Decision Tree algorithm statistics.	Results of this research might change in a cross- cultural context
6	Mateusz Baska, Helena Dudycz, Maciej Pondel	2020	Potential of Big Data for marketing	Advanced data analysis, marketing, systematic review, big data analytics.	This may breach privacy of the customers as their information such as purchases, online transactions, subscriptions are visible to their parent companies. The companies may exchange these useful customer databases for their mutual benefits.
7	Imran Bashir Dar, Muhammad Bashir Khan, Abdul Zahid Khan, Bahaudin G. Mujtaba	2021	A qualitative analysis of the marketing analytics literature	Preferred Reporting Items for Systematic Reviews and Meta- Analysis (PRISMA), backward and forward search	The search metrics and selection process of the quality papers between the periods 2000 and 2020 have limitations as the canvas is not so wide to cater for the concept of marketing analytics issues and challenges from inception to conception, as in the case of meta-analysis.

Table: 2.1 - Literature Survey

2.2 References:

1. Kiran Singh, Rakhi Wajgi on "Data Analysis and Visualization of Sales Data" in 2022 on 2016 World Conference on Futuristic Trends in Research and Innovation for Social Welfare (WCFTR'16).

2. Aamod Khatiwada, Pradeep Kadariya, Sandip Agrahari, Ricardo,Rabin Dhakal on "Big Data Analytics and Deep Learning Based Sentiment Analysis System for Sales Prediction" in 2019 on 2019 IEEE Pune Section International Conference (PuneCon) MIT World Peace University, Pune, India. Dec 18-20, 2019.

3. Wenhui Shan on "Research on Refined Sales Management, Data Analysis and Forecasting under Big Data" in 2020 on 2nd International Conference on Machine Learning, Big Data and Business Intelligence (MLBDBI).

4. Manpreet Singh, Bhawick Ghutla, Reuben Lilo Jnr, Aesaan F S Mohammed,Mahmood A Rashid on "Walmart's Sales Data Analysis" in 2017 on 4th Asia-Pacific World Congress on Computer Science and Engineering (APWC on CSE).

5. Muhammad Shahbaz, Changyuan Gao, Lili Zhai, Fakhar Shahzad, Adeel Luqman, Rimsha Zahid on "Impact of big data analytics on sales performance inpharmaceutical organizations" in 2022 on PLOS ONE.

6. Mateusz Baska,Helena Dudycz, MaciejPondel on "Potential of Big Data for marketing" in 2020 on Journal of Economics and Management ; Vol. 35 (1) ; ISSN 1732-1948.

7. Imran Bashir Dar, Muhammad Bashir Khan, Abdul Zahid Khan, Bahaudin G, Mujtaba on "A qualitative analysis of the marketing analytics literature" in 2021 on Journal of Marketing Analytics (2021) 9:242–261.

2.3 Problem Statement Definition

Problem Statement:

This research is aimed at designing and implementing of sales analysis system. It is set of alleviating the problems the company encountered during sales computation in the past. It describes and explain the computerization of sales and how to calculate due cash sold by the cashier and salesperson. The project gives a

detailed way of calculating the entire sales record including their budgeting, sales record, transaction, stock at hand etc. and how the result is stored in the database of the company as well as the system required for the computerization and tabulation of different financial areas of the company. This project is also of great advantages because it helps to analysis sales record and calculation, daily sales of the company, this is done to reduce insecurity of the company fund and sales record, because it is,manually done, the record may be incorrect.

- E- commerce company(user) needs to classify and analyze data and market statistics, so that they get to know the preferences of customers and improve their marketing strategies accordingly.
- E-commerce company(user) must make sure the quality of products sold in their site is good, so that customers find their store to be more reliable.
- E- commerce company(user) needs a way to understand the shift in preferences of customers and the current trend, so that they can satisfy the customers.
- E-commerce company(user) must find a good delivery company, to provide smooth delivery process to customers.
- E- commerce company(user) must understand how much of goods they must stock up,so that the products they invest in doesn't get wasted
- E- commerce company(user) must gather reviews from their customers, so that they are able to understand what they did was right and what went wrong.
- E- commerce company(user) must make its customers aware of the offers and facilities provided, so that it can gain attention of many customers.
- E-commerce company(user) must work on improving its popularity, so that they become a brand and thus become a go to online store.

CHAPTER 3

IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

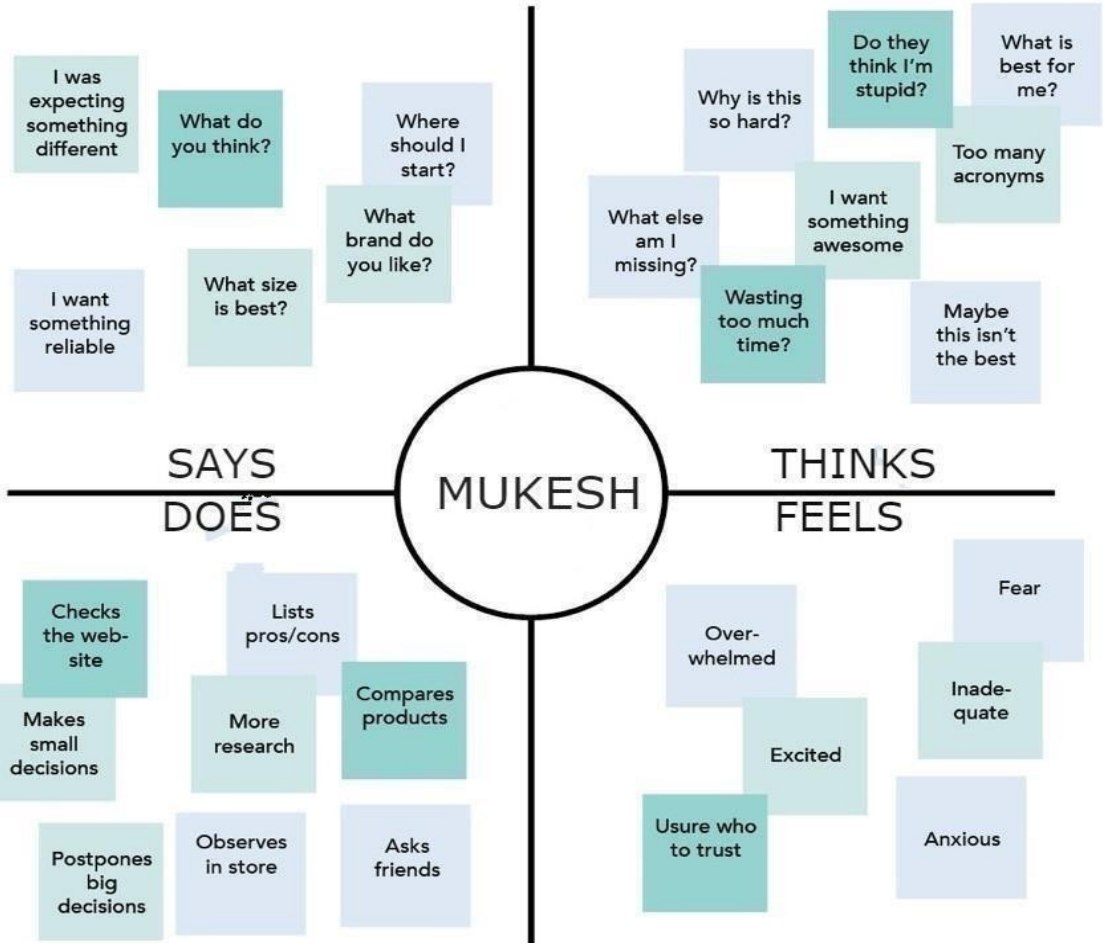


Figure: 3.1 - Empathy map canvas

The empathy map is a collaborative tool that teams can use to gain a deeper insight into their customers. Much like a user persona,an empathy map can represent a group of users, such as a customer segment. The empathy map was originally created by Dave Gray and has gained much popularity within the agile community.

3.2 Ideation & Brainstorming:

Step 1: Team Gathering, Collaboration and Select the Problem Statement.

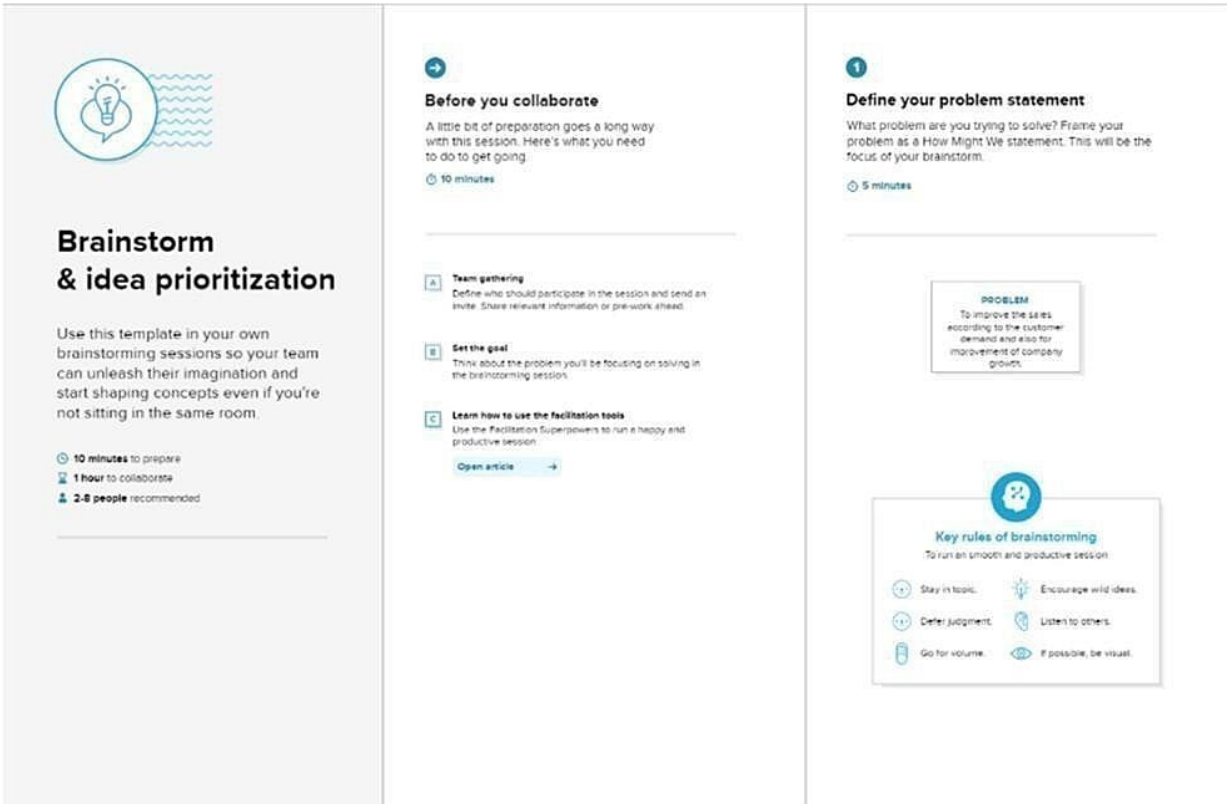


Figure: 3.2 - Team Gathering, Collaboration and Select the Problem Statement

The above image represents the existing problems that a team must solve. The team must understand the problem statement to find a solution. This makes a successful project.

Step 2: Brainstorm.

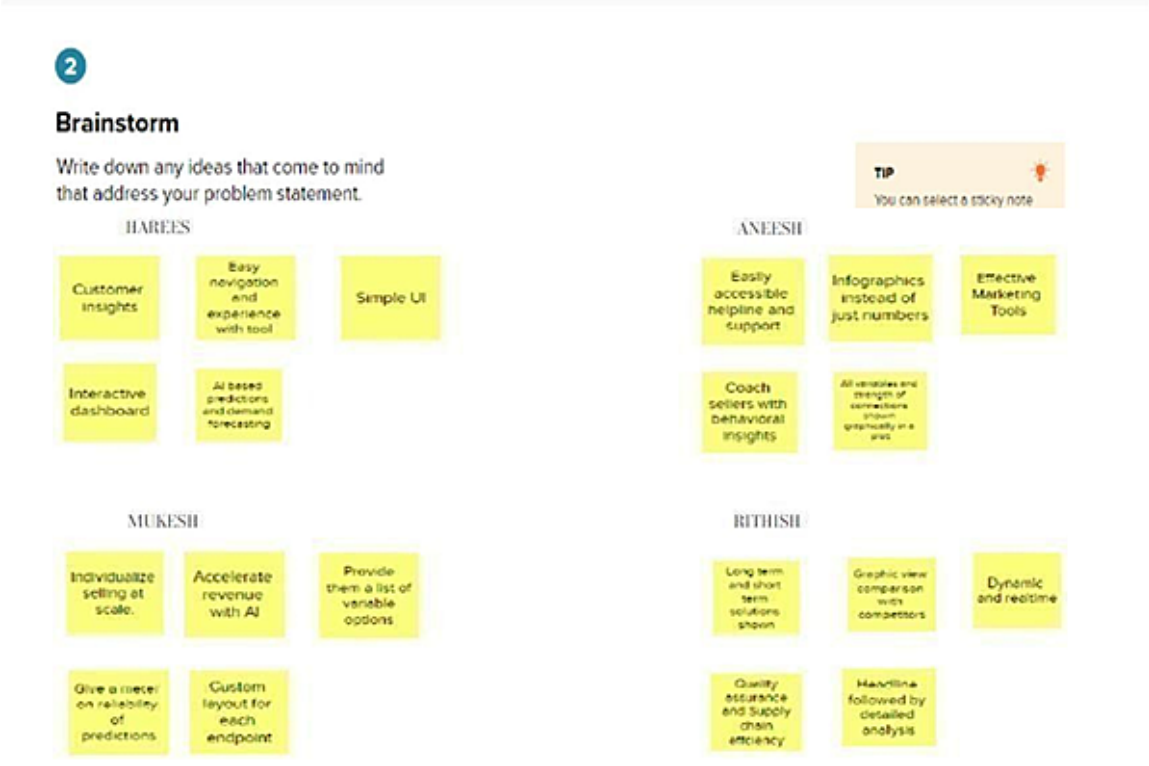


Figure: 3.3 - Brainstorm

Brainstorming is a group problem-solving method that involves the spontaneous contribution of creative ideas and solutions. This technique requires intensive, free wheeling discussion in which every member of the group is encouraged to think aloud and suggest as many ideas as possible based on their diverse knowledge.

Step 3: Idea listing and Grouping.

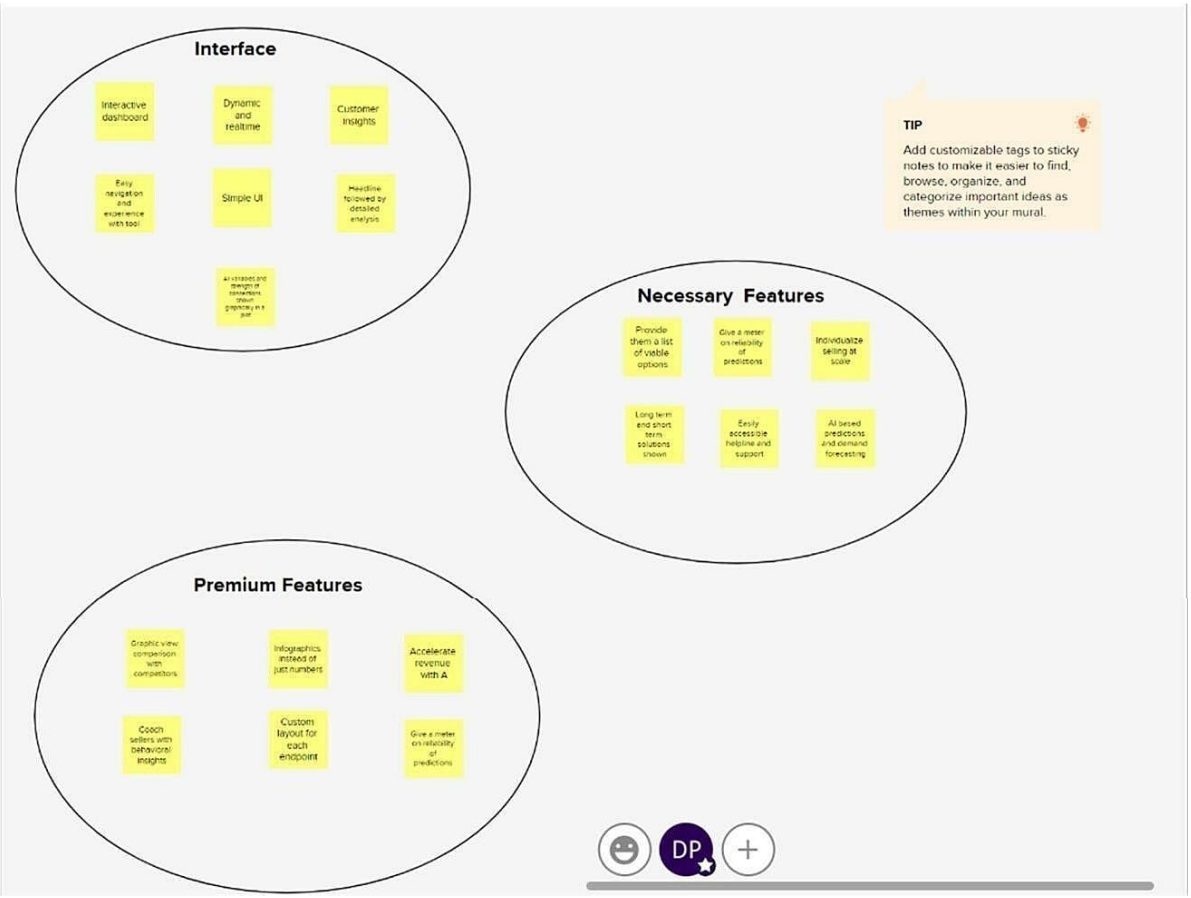


Figure: 3.4 - Idea listing and Grouping

In Idea Listing technique students are asked to produce the idea in short time and put it on the paper to keep their idea and then relate it with the topic. This technique is more effective and suitable to solve the problem and can improve students writing, attention, ability and motivation in writing process.

Step 4: Idea Prioritization.

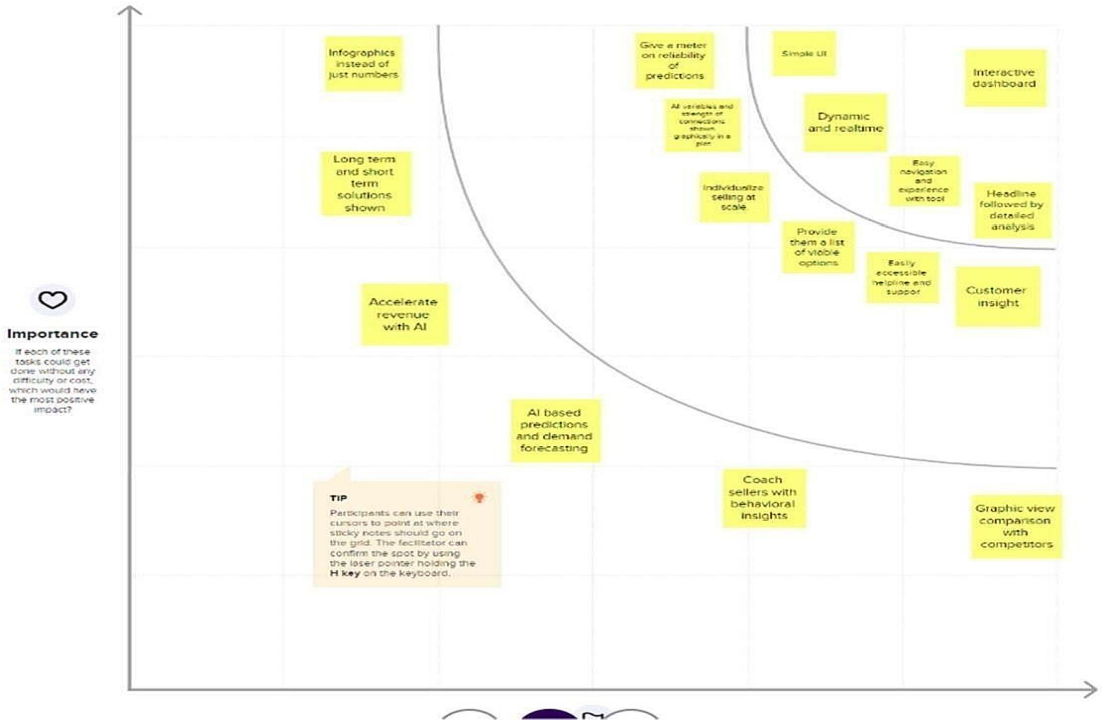


Figure: 3.5 - Idea Prioritization

The best idea is selected in “Idea prioritization”. Many ideas are selected and evaluated to find the best possible idea. Then the project is built based on the chosenidea.These ideas are chosen with the help of brainstorming and idea listing.

3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	➤ Decision makers of E-commerce companies (User) need a way to comprehend raw data, analyze and make more informed business decisions. ➤ E- commerce companies (User) need a way to understand the shift in preferences of customers and the current trend, so that they can satisfy the customers.
2.	Idea / Solution description	➤ A powerful and easy-to-use sales analytics tool that automates and visualizes sales trends to optimize business outcomes.
3.	Novelty / Uniqueness	➤ Interactive Dashboard and simple UI ➤ Dynamic and real time analytics ➤ AI based predictions and forecasting
4.	Social Impact / Customer Satisfaction	➤ Visible profits driven by informed decisions ➤ Optimize sales and marketing ➤ Ability to react to competitor's strategies
5.	Business Model (RevenueModel)	Three tier pricing- Basic, Standard, Enterprise ➤ Basic: Limited features targeting startups and individuals. ➤ Standard: Limited premium features. Target customers- Medium Scale businesses. ➤ Enterprise with all premium features targeted at Large corporations.
6.	Scalability of the Solution	➤ More B2B customer services can be provided alongside ➤ Usable by all customer facing companies and startups of all scale

Table: - 3.1 - Proposed Solution

3.4 Problem Solution Fit:

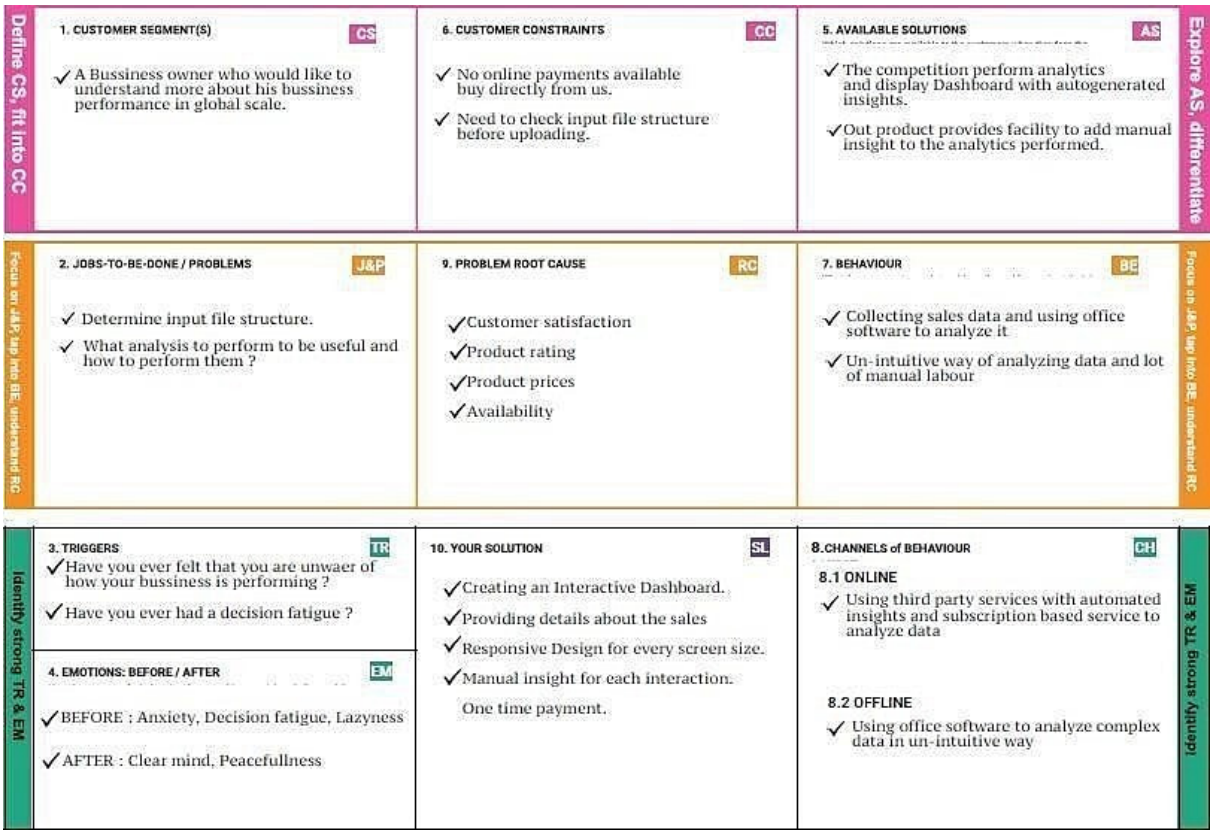


Figure: 3.6 - Problem Solution Fit

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it solves the customer's problem. This occurs when you have evidence that customers care about certain jobs, pains, and gains. At this stage you have proved the existence of a problem and have designed a value proposition that addresses your customer's jobs, pain and gains.

CHAPTER 4

REQUIREMENT ANALYSIS

4.1 Functional Requirement

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story/ Sub-Task)
FR-1	User Registration	Registration through Gmail or Google Business
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Input	Data uploaded must be of proper format
FR-4	Data Verification and Validation	Data is cleaned and verified for outliers, duplications
FR-5	Data Visualization	Proper graphs and charts are chosen for particular set of data and shown
FR-6	Business Decisions	Recommendations are made according to data

Table: 4.1 - Functional Requirement

4.2 Non-Functional Requirements:

Following are the non-functional requirements of the proposed solution.

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The system must be easy to use. The user must be able to upload their sales data easily and filter it in our system.
NFR-2	Security	User sales data must not be misused. The user's login must be secure.
NFR-3	Reliability	User's data and visualizations must stay in the system without crashing. The system's reliability must be ensured storing proper copies and results of data with their appropriate visualizations.
NFR-4	Performance	The system must be able to withstand large volumes of data and enable visualizations. It should allow multiple team members to access data simultaneously. The website must be flexible to different types of data.
NFR-5	Availability	Uploaded data must be available at all times and be fault tolerant.
NFR-6	Scalability	It should be able to produce advanced graphs and provide proper interpretation of data over large volumes.

Table: 4.2 – Non-Functional Requirement

CHAPTER 5

PROJECT DESIGN

5.1 Data Flow Diagram:

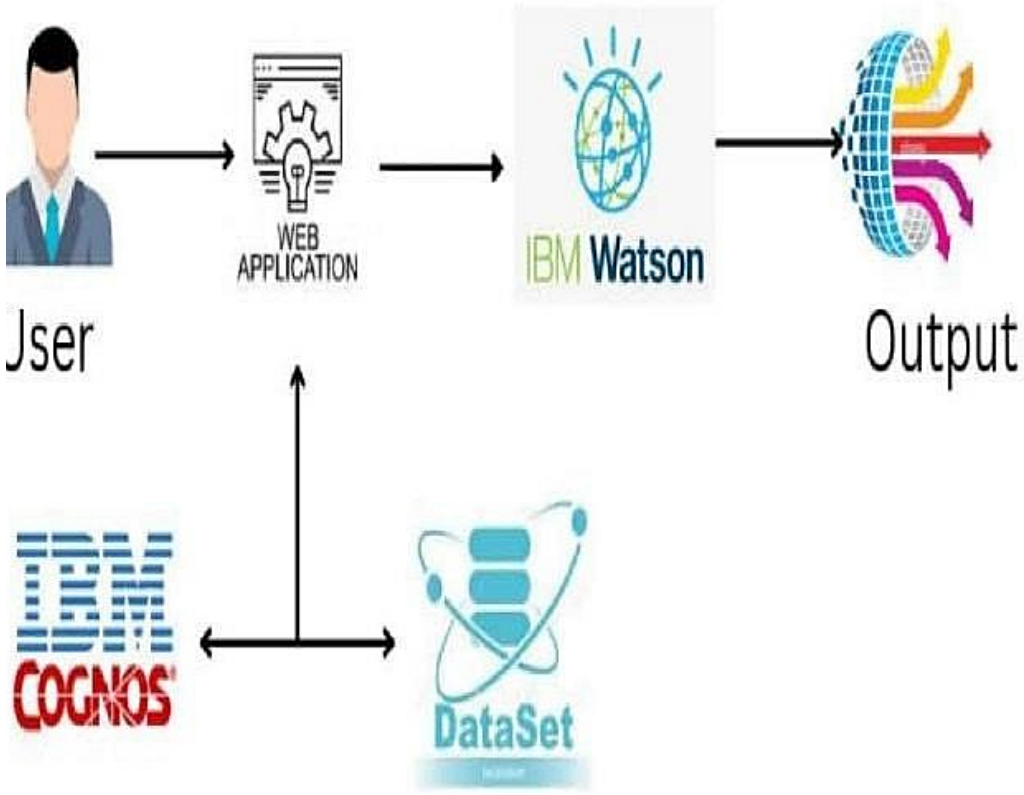


Figure: 5.1 – Data Flow Diagram

The user uses the pre defined dataset in the IBM Cognos. A web application is used to fetch the datas in the IBM Cognos. The output is predicted in the form of graphical visualization with the help of IBM Watson.

5.2 Solution &Technical Architecture

- The data is fetched from the user and data is analyze, pre-processed etc.…Data report has been created.
- Using IBM Cognos, the Data visual are being generated according to the data report which we have created using the user data.

- This can create huge changes in global market sales among peoples

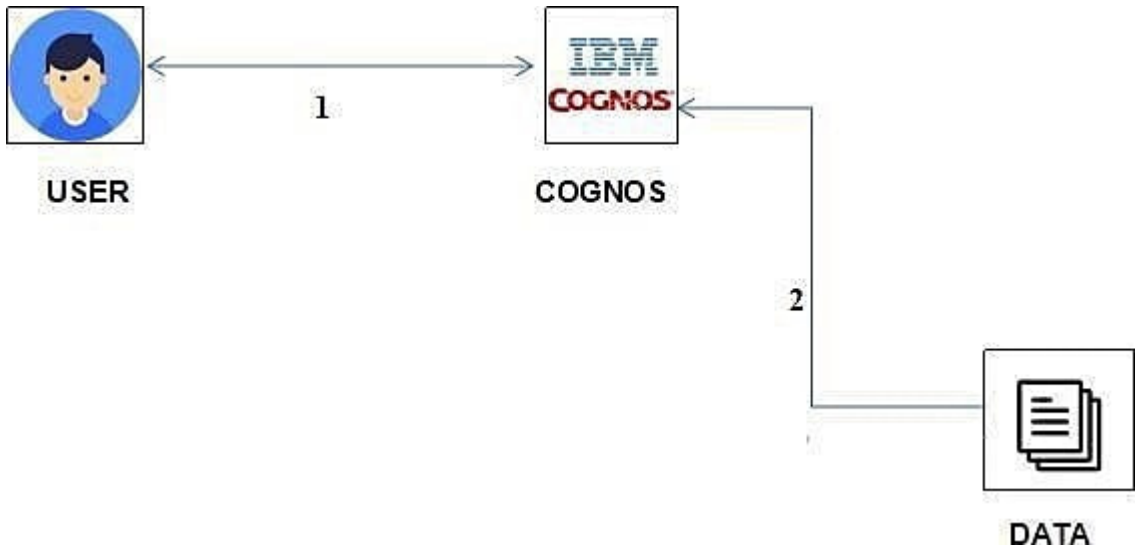


Figure: 5.2 - Solution & Technical Architecture

The dataset are accessed with the help of IBM Cognos. The output are graphically visualized with the help of these datasets.

5.3 Users Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard.	High	Sprint -1
		USN-2	As a user, I will receive confirmation email once I have registered for the application.	I can receive my confirmation email and click confirm.	High	Sprint-1

		USN-3	As a user, I can register for the application through Facebook.	I can register and access the dashboard with Facebook Login.	Low	Sprint -2
		USN-4	As a user,I can register for the application through Gmail.		Medium	Sprint -1
	Login Dashboard	USN - 5	As a user, I can log into the application by entering email and password.		High	Sprint -1
Customer (Web user)	Login	USN-1	As a user,I can register for the application by entering my email, password and confirming my password.	I can access my account and dashboard.	High	Sprint-1
Customer Care Executive	Chat Box	USN-1	It can be used by easily access and responsible	I can access by easily through application	High	Sprint-2
Administrator	Calling	USN-2	It can be used by easily access and responsible.	I can access by easily through application	High	Sprint-2
	Mail	USN-3	It can be used by easily access and responsible.	I can access by easily through application.	High	Sprint-1

Table: 5.1 - Users Stories

CHAPTER 6

SPRINT PLANNING & ESTIMATION

6.1 Sprint Planning & Estimation

TITLE	DESCRIPTION
Literature Survey & Gathering	Literature survey on selected project and gathering information by referring the project's related technique papers, research publications, etc.
Prepare Empathy Map	Prepare empathy map canvas to capture the user's pains & gains and prepare the list of problem statements.
Ideation	To list by the organizing brainstorm sessions and prioritize the top three ideas based on the feasibility and importance.
Proposed Solution	To prepare the proposed solution documents, which includes the novelty, feasibility of ideas, business mode social impact, scalability of the solution, etc.
Problem Solution Fit	Includes customer segments and customer constraints,the problem root cause and jobs to be done.
Solution Architecture	From data collection to digit recognition by the web application are represented in architectural diagrams.

Customer Journey	Prepare the customers journey map help the customer understand the user interaction and experiences with the application from the beginning to the end.
Functional Requirement	Prepare the functional requirement document.
Data Flow Diagrams	Data flow diagrams and user stories are prepared, and four sprint phases are described. .
Technology Architecture	Technical flow graphs are created, and the functions of technical stacks are defined.
Prepare Milestone and ActivityList	Prepare the milestones and activity of the project.
Sprint Delivery Plan	To develop a template for sprint planning.
Project Development – Delivery of Sprint-1, 2, 3&4	Develop and submit the developed code by testing it and having no errors.

Table: 6.1 - Sprint Planning & Estimation

6.2 Sprint Delivery Schedule

SPRINT	DESCRIPTION
SPRINT 1	As a user, I can register for the application by entering my email, password, and confirming my password. As a user, will receive confirmation email once I have registered fo the application as a user, I can register for the applicatio through Facebook as a user, I can Sign In into th Application by giving out my registered Email ID & Password
SPRINT 2	As a user, I can upload Global Sales Datasets for Analysis purpose. As a user, I can spot the Trends in the Datasets and create interactive Visualization Charts. As a user, I ca handle Sales Data Analysis to make meaningful insights ou from the datasets
SPRINT 3	As a customer care executive. I can be able to solve the doubts and queries of the users
SPRINT 4	As an Administrator, I can modify the Dashboards according to their needs.

Table: 6.2 - Sprint Delivery Schedule

6.3 Reports from JIRA

Burn Up Chart

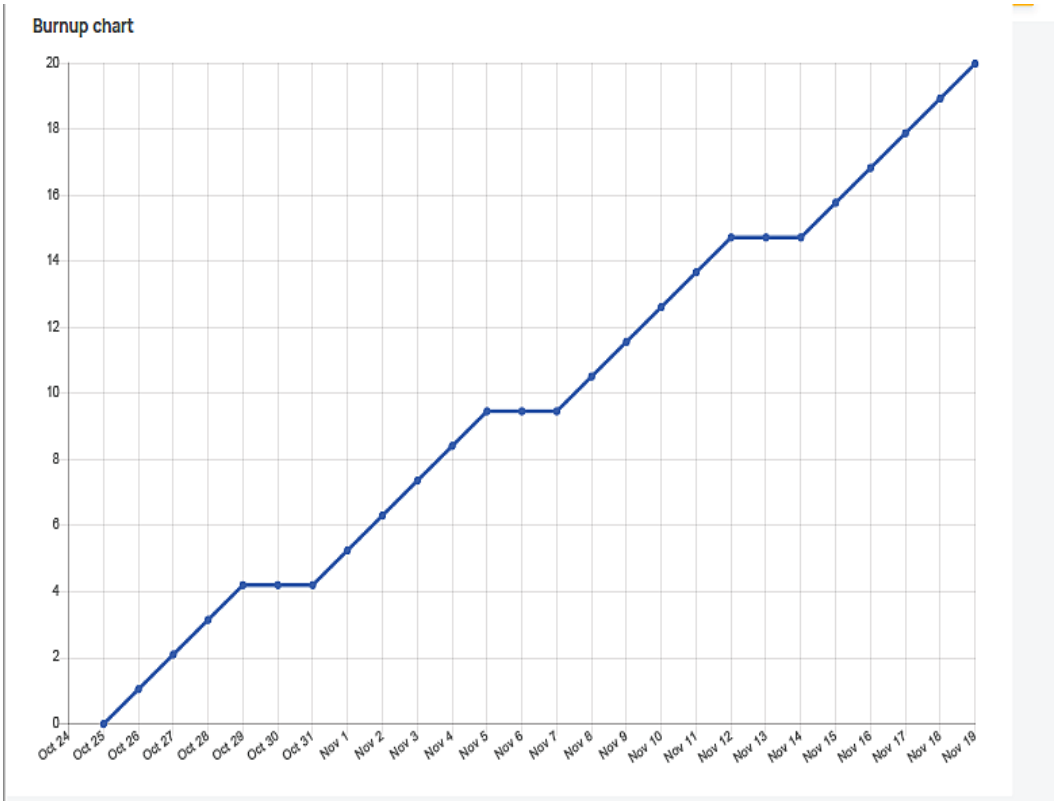


Figure: 6.1 - Burn Up Chart

The burn-up chart is a tool used in Scrum projects. It is a visual representation of a team's work process. It displays the scope of a project and the work completed. Using a burn-up chart, a team can easily track their progress as they work towards completion of a sprint.

Burndown Chart

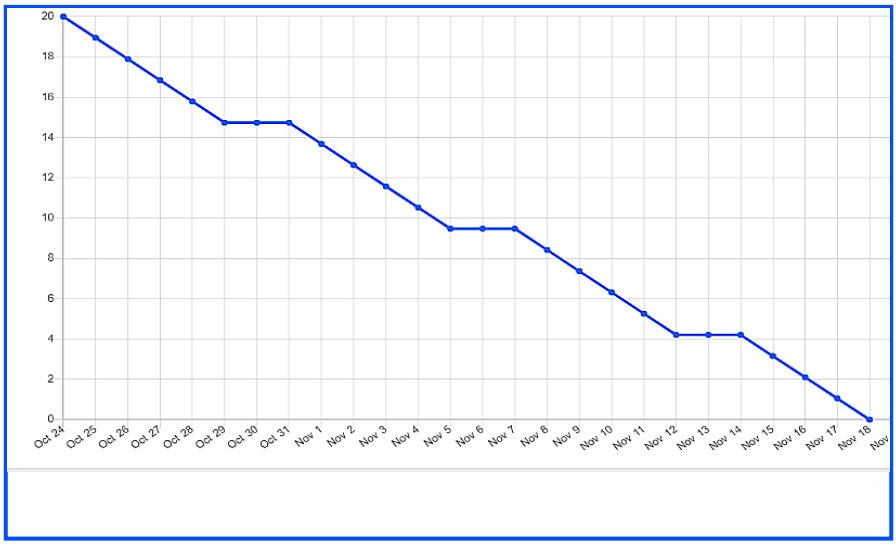


Figure: 6.2 - Burndown Chart

The burndown chart shows the amount of work that has been completed in a sprint and the total work remaining. Burndown charts are used to predict your team's like hood of completing their work in the time available.

CHAPTER 7

CODING AND SOLUTIONING

7.1 Feature - 1

- Excel worksheets come with a standard limit of 1,048,576 rows. While performance in Excel will slow well before the said row limit, it's a common requirement for users to analyze datasets over one million rows in size. Congo's Analytics compresses your data so you can extract insights from large datasets. With a well-built data model, Congo's Analytics can help you analyze datasets containing over 100 million rows.
- Cognos Analytics also offers useful features for working with truly large datasets that are greater than several hundred million rows. For example, users can set up aggregation tables in Cognos Analytics. Aggregations take advantage of pre-calculated data to accelerate queries, reducing the time needed to render your reports.
- Additional computing power can be unlocked with Cognos Analytics Premium. If your organization needs to store very large datasets in Cognos Analytics, you can purchase dedicated cloud Cognos Analytics Premium instances to enable even faster query times and refresh capabilities.
- While Cognos Analytics supports many standard data visualizations out of the box, it's also possible to build your own with custom data visualizations. By adding open- source data visualization libraries from R and Python, analysts can create highly customizable visualizations to add to their next Cognos Analytics report. With around 750 million users, Excel remains the world's number one data analysis tool.

- If you’re comfortable creating Pivot Tables in Excel, you can use this familiar experience to slice and dice your data, referencing the same datasets used in other Cognos Analytics reports.
- Finally, users can get the latest data from Cognos Analytics datasets by refreshing their Excel connections. This ease of access is a game-changer for organizations stuck between the two platforms.

7.2 Feature - 2

- Cognos Analytics can help you build interactive and insightful mapping data visualizations. It comes standard with three different map types: Standard Map, Filled Map (choropleth), or ArcGIS Maps for Cognos Analytics.
- Aligning on one version of the truth across many reports is a challenging undertaking that often ends with inconsistent definitions of metrics and KPIs. One of Cognos Analytics most compelling features is its ability to define measures in a data model and then re-use these calculations across numerous connected reports. By defining your KPI calculations in central datasets, you can ensure “Gross Profit” and “Sales Revenue” return the same numbers, regardless of which report you’re viewing.
- This feature differentiates Cognos Analytics from other data visualization tools, which often define KPIs in each report individually.

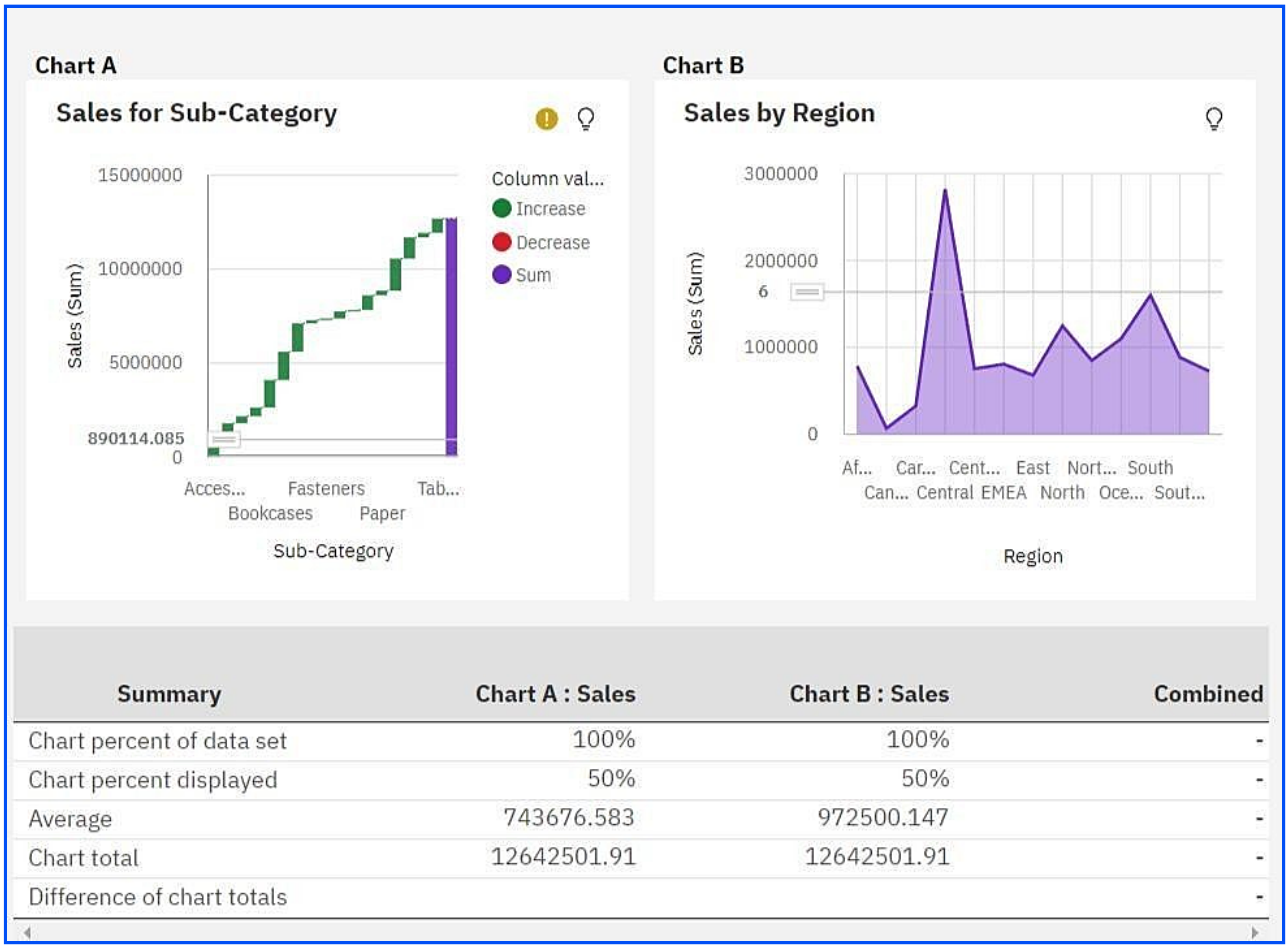
CHAPTER 8

TESTING

8.1 Test Cases

Sales for sub-category and sales by region:

The sales for sub-category and sales by region can be tested using the water plot and area visualization that can be able to predict the data on the predefined manner.



Summary	Chart A : Sales	Chart B : Sales	Combined
Chart percent of data set	100%	100%	-
Chart percent displayed	50%	50%	-
Average	743676.583	972500.147	-
Chart total	12642501.91	12642501.91	-
Difference of chart totals			-

Figure: 8.1 - Sales for sub-category and sales by region

Sub-category wise sales and profits using line and bar chart:

This can be able to easily classify the sub-category and sales that have been sell the assigned products. It can easily identify the relationship between the sales and profit manner.

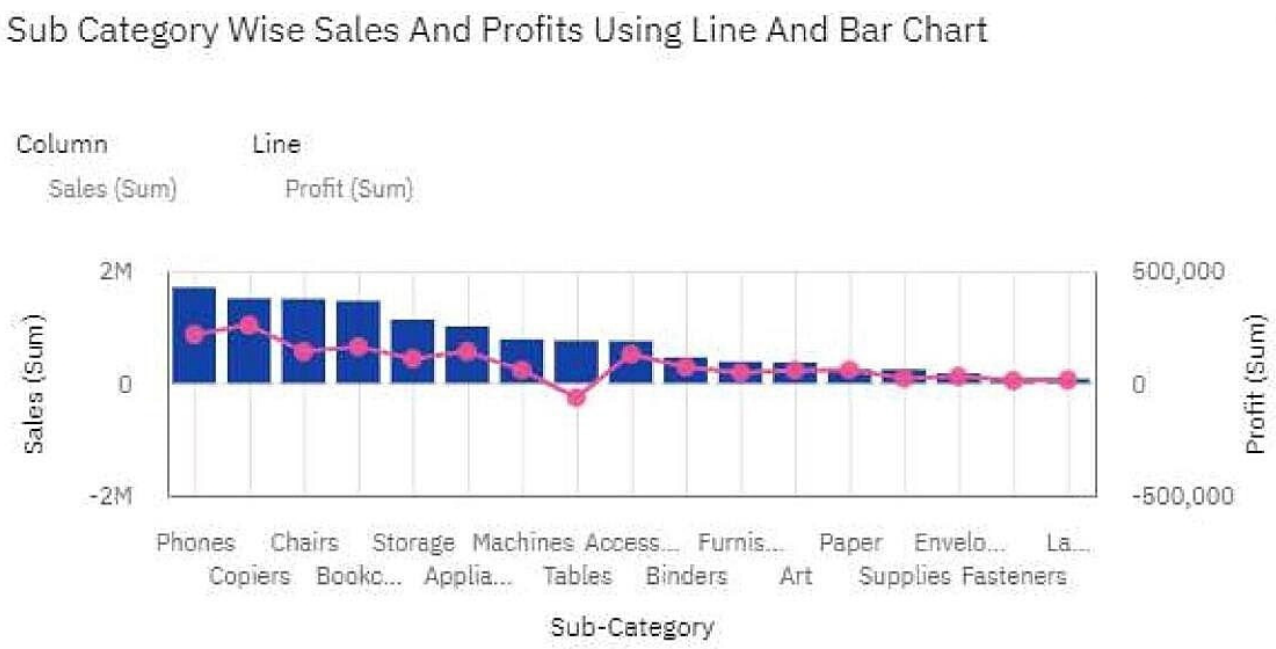


Figure: 8.2 - Sales for sub-category and sales by region

Sales by Order Priority:

The values that are with the scaled ratio has been profited using the Line plot and it must be help the sales of data based on the different prices.

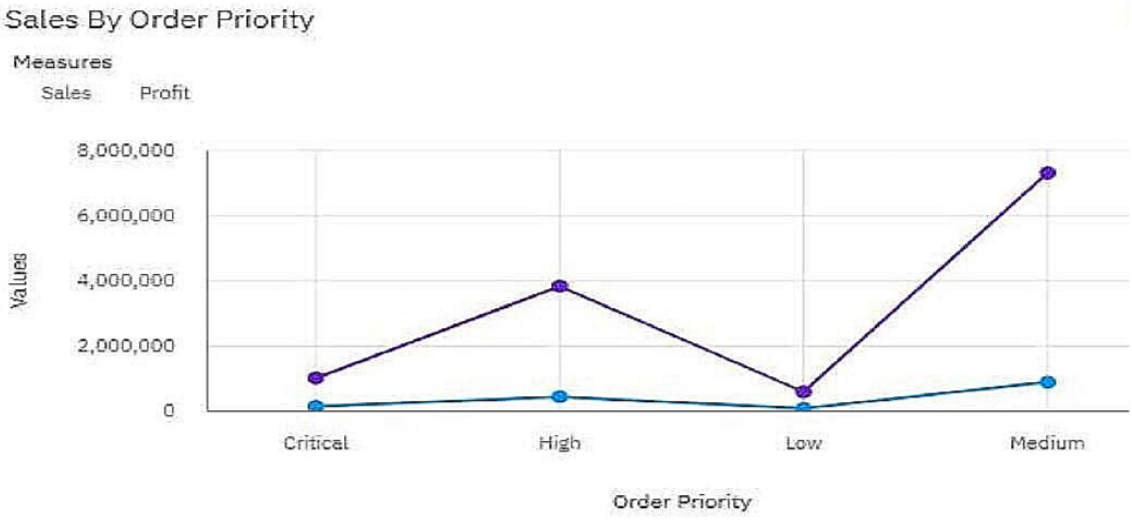


Figure: 8.3 -Sales by Order Priority

Sales, Profit and Quality by Segment:

In a different segment each shop has both occurs profit, sales, so let's plot the graph to visualize the sales profit quality by segment wise.

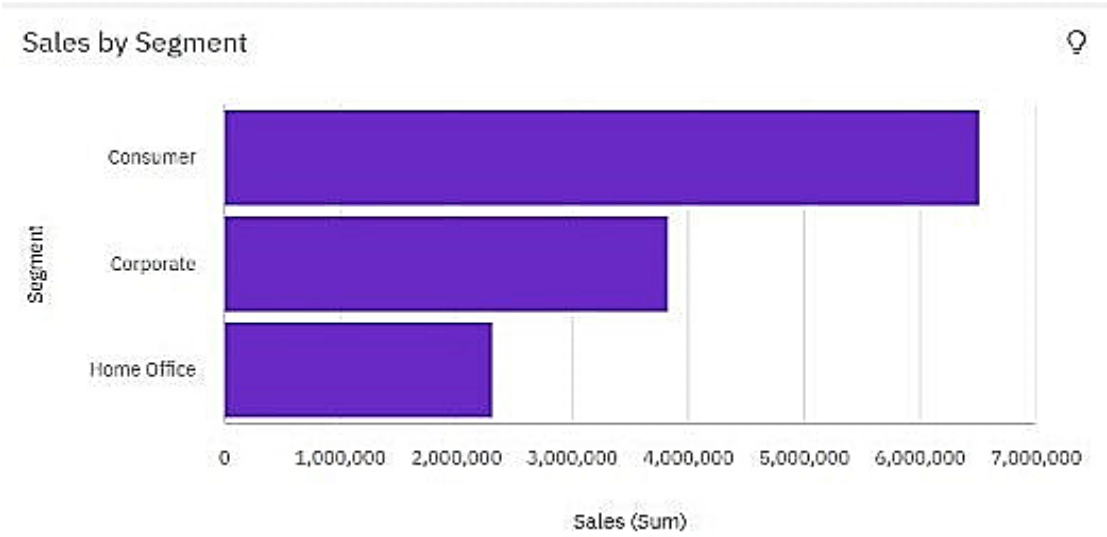


Figure: 8.4 – Sales, profit and quantity by segment

Profit and sales by sub-category:

The Profit and sales by sub-category shows the profit gained and the sales quantity of the product in a graphical representation with the provide data.

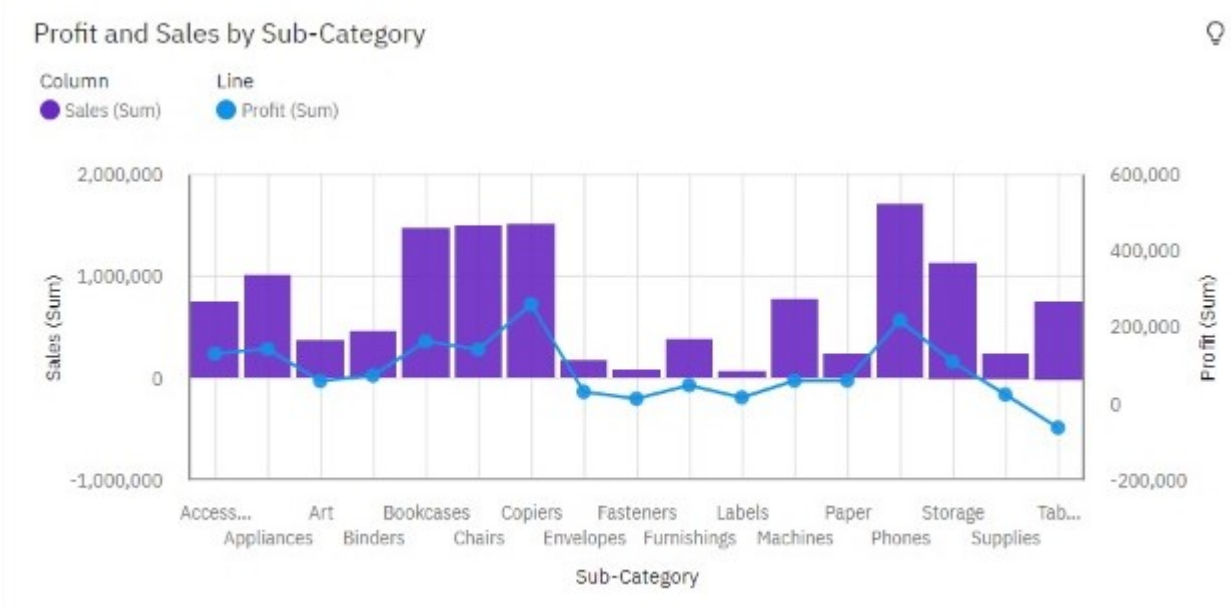


Figure: 8.5 – Profit and sales by sub-category

Sales vs Profit by countries:

The Sales vs Profit by countries shows the profit gained and the sales quantity of the product over countries in a graphical representation with the provide data.

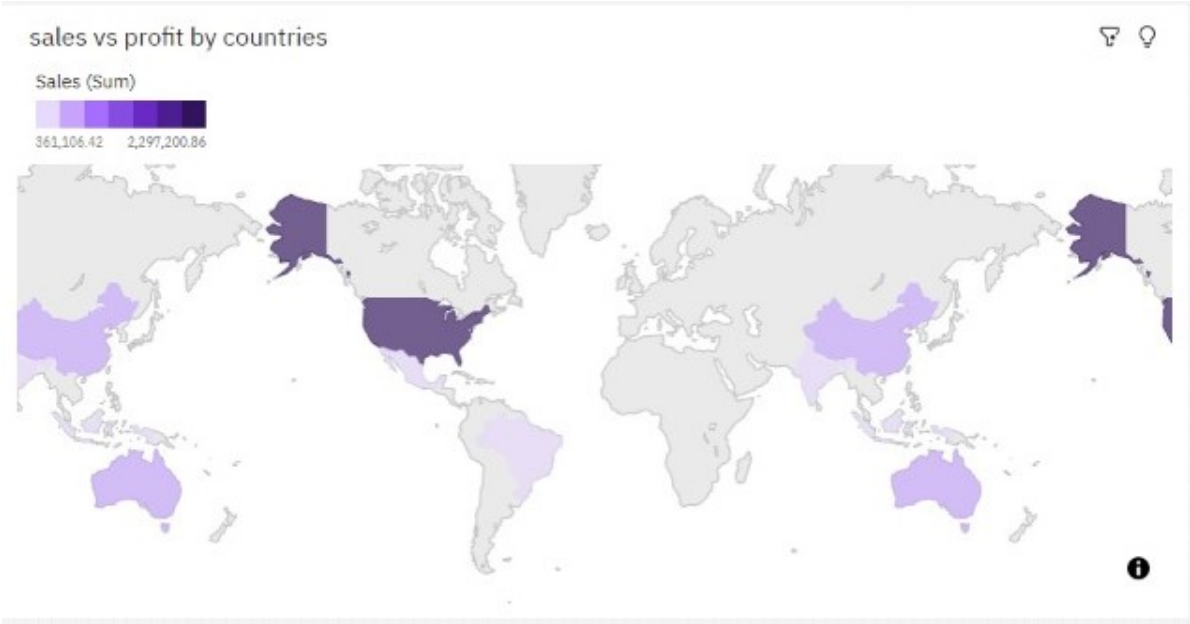


Figure: 8.6 – Sales vs Profit by countries

Country wise Sales vs Profit using word cloud:

Word clouds or tag clouds are graphical representations of word frequency that give greater prominence to words that appear more frequently in a source text. The larger the word in the visual the more common the word was in the document. The Country wise Sales vs Profit using word cloud shows the profit gained and the sales quantity of the product over countries in a graphical representation provided data.

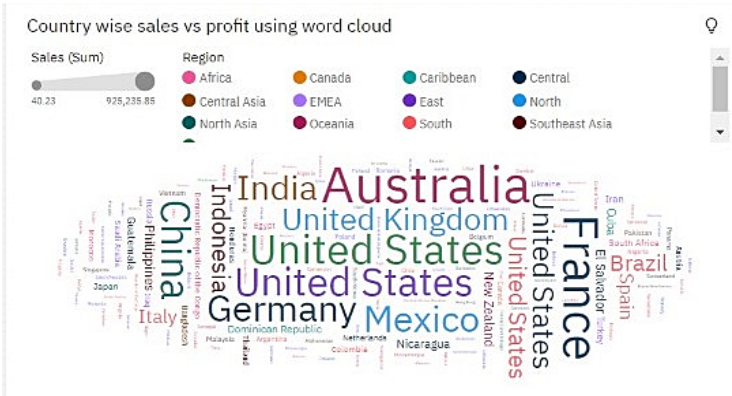


Figure: 8.7 – Country wise Sales vs Profit using word cloud

Sales vs Profit Scatter plot with Sub-Category and Region:

The Sales vs Profit Scatter plot with Sub-Category and Region shows the profit gained and the sales quantity of the product over countries with sub-category and regions in a graphical representation with the provided data.

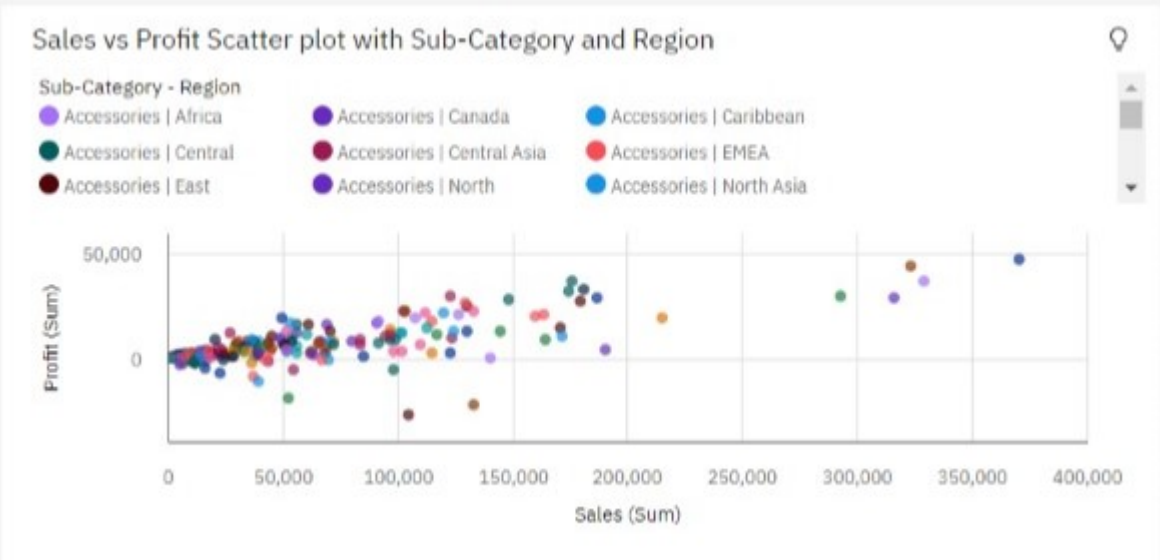


Figure: 8.8 – Sales vs Profit Scatter plot with Sub-Category and Region

8.2 User Acceptance Testing:

1. Purpose Of Document

The purpose of this document is to briefly explain the test coverage and open issues of the Global Sales Data Analytics project at the time of the release to User Acceptance Testing (UAT).

2. Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved.

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	9	5	1	1	16
Duplicate	2	1	4	1	8
External	4	3	0	2	9
Fixed	12	4	6	17	39
Not Reproduced	0	0	1	0	1
Skipped	0	1	1	2	4
Won't Fix	0	8	6	2	16
Totals	22	22	19	25	93

Table: 8.1 – Defect Analysis

3. Test Case Analysis

This report shows the number of test cases that have passed, failed,and untested

Section	Total section	NotTested	Fail	Pass
Print Engine	8	0	0	8
Client Application	47	0	0	47
Security	4	0	0	4
Outsource Shipping	5	0	0	5
Exception Reporting	8	0	0	8
Final Report Output	3	0	0	3
Version Control	5	0	0	5

Table: 8.2 - Test Case Analysis

CHAPTER 9

RESULTS

9.1 PERFORMANCE MATRICES :

S.No	Parameter	Screenshot/Values
1.	Dashboard design	Number of Visualization/Graphs-7-8 visualization/6-7 graphs
2.	Data Responsiveness	Users and Analyst or Developers
3.	Amount Data to Rendered (DB2 Matrics)	5 Countries
4.	Utilization of Data Filters	Sales,Profit,Products, Market rate and Order Id
5.	Effective User Story	Number of Scene Added-30 user stories
6.	Descriptive Reports	Number of Visualization/ Graphs - 4 visualization/6 graph

Table:9.1 - Performance Metrices

CHAPTER 10

ADVANTAGES & DISADVANTAGES

Advantages:

- As a business grows, products evolve, new sales opportunities emerge. Tracking sales data helps enterprises understand the product fitment across industries and regions.
- Sales data deals closed, qualified opportunities, length of sales cycles captured over a year or even a quarter, can significantly improve the way businesses strategize their sales targets.
- Personalized customer journey's are hard to build without insights into customer behavior. The customer’s journey has multiple touch point, which can be improved by tracking factors like time on a certain website, tone during the call, and response rate.

Disadvantages:

- A market analysis does not guarantee an accurate diagnosis of a market.
- Data misinterpretation from a market analysis can be detrimental to your marketing campaign.
- Some of the data analytics tools are complex to use.
- This may breach privacy of the customers as their information such as purchases.

CHAPTER 11

CONCLUSION

Sales data is enormously powerful and it’s something you come by just by tracking your activities effectively. Knowing how to fully utilize it will revolutionize your sales process, leading to better lead generation, client engagement and retention and, ultimately, more sales. When coupled with the sales activities we’ve explored, you’ll have a cycle that provides you with refined data, revealing how you can save time and make money. But remember, analyzing your data isn’t a one time event, it’s a constant process. The sales industry doesn’t stay still for long and you’ll want to make sure your team has the best chance it can to beat the competition. This report aims to increase the level of awareness of the intellectual and technical issues surrounding the analysis of massive data.

CHAPTER 12

FUTURE SCOPE

As the spread of Covid-19 spread across the world, most of the processes started happening online. With everything taking place online, there was a huge amount of data generated through these processes, which accelerated the growth of data scientists all around the world. The recent surges in e-commerce platforms, online transactions, and more students opting for online courses have contributed to the need to analyze massive data chunks for a comprehensive understanding. This, in turn, has amplified the future scope of data science across the world.

Some of the industries that use data analytics are those in finance, media, outsourcing, and internet commerce. To filter out the potentially dangerous areas of populated data and break down the data that may be accessed, banks use data mining technologies. As a result of the country's transformation, the data surrounding us is evolving rapidly. Having a prominent data expert on staff is now necessary for most firms, as it provides valuable information. Future Scope of data analytics in is prominent in the fields of Banking, Manufacturing, Retail, Health Care, Information and Communications Technology, etc.

CHAPTER 13

APPENDIX

GitHub & Project Demo Link

GitHub Link:

https://github.com/IBM-EPBL/IBM-Project-21114-1659773061

Project Demo Link:

https://drive.google.com/file/d/12Y9qJnSSPqzxUY014Wo33MGg_BcfsI3d/view?usp=sharing