We Make You Shine
St. JOSEPH'S INSTITUTE OF TECHNOLOGY
(An Autonomous Institution)
St. Joseph's Group of Institutions
Jeppiaar Educational Trust
OMR, Chennai - 119

IBM NALAIYA THIRAN
GLOBAL SALES DATA ANALYTICS

TEAM ID: PNT2022TMID28374

TEAM MEMBERS

BIPIN KISHORE N - 312419205021
ANANDHAN M R - 312419205013
MOHAMED UWAIS Z - 312419205060
MANOJ K - 312419205056

INDUSTRY MENTORS: SHANAWAZ ANWAR, INDRA PRAKASH

FACULTY MENTOR: NIROSHINI INFANTIA C

PROJECT REPORT FORMAT

1. INTRODUCTION

1.1 Project Overview

1.2 Purpose

2. LITERATURE SURVEY

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation & Brainstorming

3.3 Proposed Solution

3.4 Problem Solution fit

4. REQUIREMENT ANALYSIS

4.1 Functional requirements

4.2 Non-Functional requirements

5. PROJECT DESIGN

5.1 Data Flow Diagrams

5.2 Solution &Technical Architecture

5.3 User Stories

1. INTRODUCTION

1.1 PROJECT OVERVIEW

Ecommerce Sales Dashboard is an service provided to the organizations to get suggestion and insight about he product that they are selling. An ecommerce dashboard is a curated set of metrics, KPIs and other data that's designed to highlight, in the clearest possible way, trends, anomalies and information related to an online store that regularly warrants attention. The primary features of dashboard are accuracy, design flexibility and availability. Dashboards don't just help with monitoring your operations in real time though. Another important use for them is as a powerful team motivation tool. Whether individuals on the team are intrinsically or extrinsically motivated, seeing the direct results of their work can provide a huge motivation boost. In this Web service, the Admin can be able to import the data and can see the progress of those data in a form of charts for better visualization and understanding. Admin's Login process is an in-build function with specific password and username the main aspect of admin is he/she can able to upload and purge the data. But on the other hand the user can be able to only view the data that has been uploaded by the admin. Since the Web service is mainly focused on the working of the organization, so it has given all the authorities to the Admin chosen by the organization. At the same time the users, workers can be able to register themselves in through the New User process and be able to view the dashboard. The charts give the suggestion to the organization about the progress of the product, whether to give offers, discount and other product related details.

1.2 PURPOSE

Regular data analysis provides an understanding of the products that your customers are buying and helps you dissect why they are behaving in a certain way. You can also find patterns in your lead conversions and drop offs. All of these aspects enable you to optimize your sales process. With an intelligent sales CRM like Close, you get actionable reports to keep a close eye on essential sales KPIs. Such a continuous sales

analysis helps in iterating your sales strategy so that you can continue growing your business sustainably. Data Trend Analysis is the type of sales analysis is about finding patterns in sales data (whether they are going up or down) over a specific timeframe. A micro trend might last for a week for a specific product, while a macro trend might last for a quarter over a range of products. Sales Performance Analysis is gauge the effectiveness of your sales strategy and how your sales team is performing, a sales performance analysis can come in handy. It can involve conducting a strictly financial analysis based on the sales revenue generated and how it's meeting your sales targets. Product Sales Analysis is the company offers many products, then you need to conduct regular product sales analysis to find out the items that are overcrowding your product lining. You can use KPIs and revenue bar charts to look at the product sales overall or in a specific time frame. Sales growth shows how much your revenue increases (or decreases) over a specific period. This metric provides a bird's- eye view of sales and how your team is performing.To determine sales growth, take the sales total for the current period and subtract the sales total from the previous period. Divide that result by sales from the previous period, then multiply by 100 to get your growth percentage. Sales management reports are important to monitor the effectiveness of your sales reps and help them identify selling opportunities in customer interactions. Essentially these reports are about crunching meaningful patterns in your data and actionable insights to improve the sales performance of your team. With sales management software like Close, you can trust that your sales reps will stay organized and efficient, and spend time on deals that positively affect your bottom line. Our dashboards will let you identify the traits of your top performers so that you canshape your sales training. You can even share feedback with your reps for filling the gaps in salesskills and improve their effectiveness.

2. LITERATURE SURVEY

2.1 IMPLEMENTATION OF BUSINESS INTELLIGENCE FOR SALES DATA MANAGEMENT USING INTERACTIVE DASHBOARD VISUALIZATION IN XYZ STORES

Data Management is one of the crucial processes carried out at XYZ Store to get information about the sale of products. In carrying out its operational activities, XYZ Store uses the Smile Invent application to manage data on products sales transactions. Still, this application has not been able to assist managers in producing the required reports. Therefore, one way to overcome this problem is by implementing the Business Intelligence (BI) application at the XYZ Store by using Interactive Dashboard Visualization. In implementing the BI application, the BI Roadmap is used as a basis for conducting research starting from the identification of problems to be selected. After that, the planning phase is carried out by evaluating the infrastructure and planning projects. Then the analysis phase focuses on carrying out a detailed analysis of business problems and opportunities from BI implementation. Next is the design phase by carrying out the data warehouse design process and ETL using the Pentaho Data Integration (PDI). Then the implementation phase is carried out, namely the selection and use of BI application tools to perform Data Visualization. It is hoped that this research can produce reports in the form of Interactive Dashboard Visualization that can be used by store managers to make better decisions.

2.2 DEVELOPING A REFERENCE MODEL FOR KPI AND DASHBOARD REPORTING IN SALES & MARKETING

In the Bachelors thesis we will present a model which can aid in the (semi) automation of KPI and Dashboard design, from a Sales and Marketing point of view. After defining the various involved objects and actors, we provide a set of properties on which different Business Types can be classified. We combine this with some of the Functional Roles involved in Sales and Marketing to create a model that can provide importance relationships between KPIs and the Functional Roles that require these KPIs for their respective Business Information Management. We will attempt to verify and fill the model with the results of web surveys held among various professionals working in Sales and Marketing. With these results we will show an example of a Business Template, showing the most important KPIs for a Functional Role with respect to it's Business Type. We will discuss the possible relation between the visual representation of KPIs and the business functions they are monitoring. Finally, we conclude and give recommendations for further research and changes to the model.

2.3 BUSINESS INTELLIGENCE DASHBOARD IN DECISION MAKING

Efficient internal processes contribute much towards the growth and success of any organization. As an organization grows, the amount of data required in an organization also becomes massive. Collecting and analyzing vast quantities of data can be a tedious process. Lack of availability of data in the right form at the right time can result in a delay in a decision that may need to be made related to that data. The main goal of this project is to analyze the use of business intelligence dashboards for decision making processes among various departments in a manufacturing organization. The study focused on understanding the extent to which the employees in the manufacturing organization used the functionalities provided by the business intelligence dashboard. The project dealt with conducting in depth interviews and surveys with employees from three different departments in a manufacturing organization.

2.4 DASHBOARD FOR MULTISTORE ECOMMERCE COMPANY

It was the intent of this project to implement a Business Intelligent system for an E-Commerce multistory business. The software was requested by a sector leader and the system was implemented successfully, and delivered in time and on budget. It has been in use since the day it was delivered to the client, being an important factor in the decision-making of the company. The project sprout from the lack of analytical tools that the company had at its disposal. With an ever-growing business, the necessity for a better understanding of the commerce, mixed with a large amount of data ready to be analyzed, gave this project an important placement within the business. The development followed the trends on the Business Intelligence world, reduced to the scope of the project, while leveraging only Free Open Source Software to build the system. The use of agile methodologies played an important role in the success of the project, due to the investigative nature that the project had at its beginning. The approach to design, build and deploy this type of systems is widely different to a usual Web Application, so an adaptation towards the domain and style of this analytical system was important, focusing on the correctness and analytical capabilities of a complex data model. With all, the project was a great success both in achieving the proposed goals and as a knowledge-base for an overall BI system.

3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map canvas is a more in-depth version of the original empathy map, which helps identify and describe the user's needs and pain points. And this is valuable information for improving the user experience. Teams rely on user insights to map out what is important to their target audience, what influences them, and how they present themselves. This information is thenused to create personas that help teams visualize users and empathize with them as individuals, rather than just as a vague marketing demographic or account number. Agile teams in a variety of departments use empathy map canvases to better understand how to meet their customers' needs. Design teams use them to help understand the various reasons why a user might interact with the product so they can design a user-friendly experience.

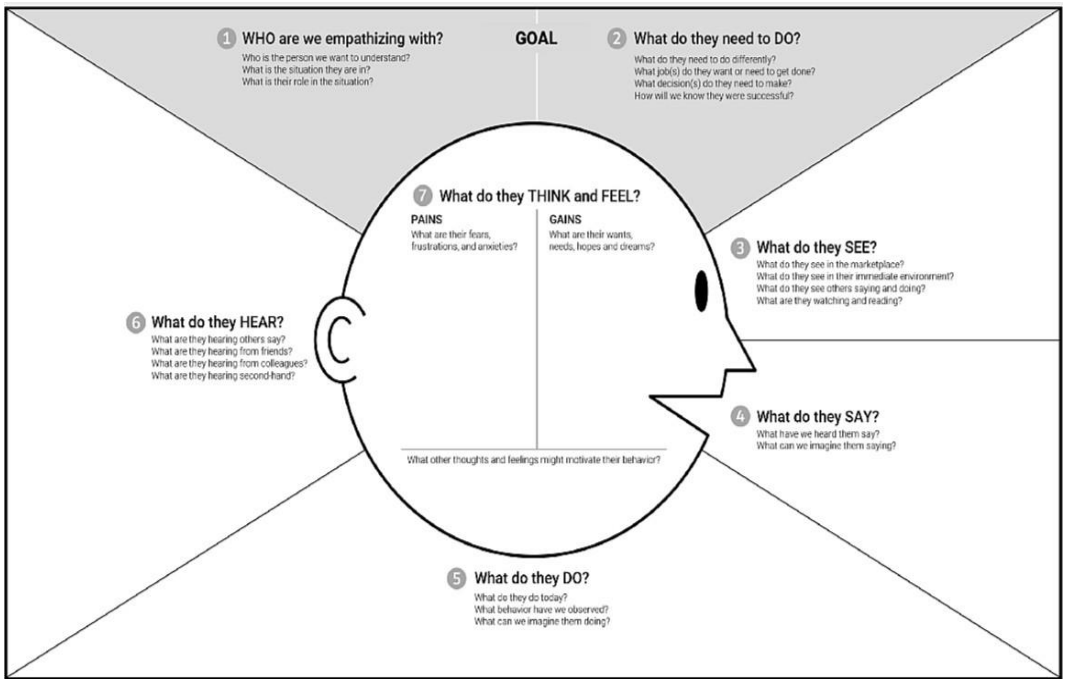


FIG 3.1 EMPATHY MAP

Sales teams use them to learn who customers are at an individual level so they can help

them invest in a product that suits their needs, rather than leading with a sales pitch that might be off- putting or not appropriately tailored to customers. An empathy map canvas helps brands provide a better experience for users by helping teams understand the perspectives and mind set of their customers. Using a template to create an empathy map canvas reduces the preparation time and standardizes the process so you create empathy map canvases of similar quality. Good canvases rely on insights from actual users, which help provide an accurate picture of how they feel about their experience with the product. This provides insight into which features are accessed the most often and how they are used. And this knowledge empowers teams to make the improvements that most benefit the user and increase the product's value.

FIG 3.2 GLOBAL SALES DATA ANALYTICS EMPATHY MAP

3.2 IDEATION & BRAINSTORMING

Ideation is often closely related to the practice of brainstorming, a specific technique that is utilized to generate new ideas. A principal difference between ideation and brainstorming is that ideation is commonly more thought of as being an individual pursuit, while brainstorming is almost always a group activity. Brainstorming is usually conducted by getting a group of people together to come up with either general new ideas or ideas for solving a specific problem or dealing with a specific situation. For example, a major corporation that recently learned it is the object of a major lawsuit may want to gather together top executives for a brainstorming session on how to publicly respond to the lawsuit being filed. Participants in a brainstorming session are encouraged to freely toss out whatever ideas may occur to them. The thinking is that by generating a large number of ideas, the brainstorming group is likely to come up with a suitable solution for whatever issue they are addressing. The lines between ideation and brainstorming have become a bit more blurred with the development of several brainstorming software programs, such as Bright idea and Idea wake.

These software programs are designed to encourage employees of companies to generate newideas for improving the companies' operations and, ultimately, bottom-line profitability. The programs often combine the processes of ideation and brainstorming in that individual employees can use them, but companies may simulate brainstorming sessions by having several employees all utilize the software to generate new ideas intended to address a specific purpose. Inthe business world, ideation is associated with things such as inventing and/or developing new products or services or creating new means or methods of production or delivery of products or services. Amazon's "Prime" two-day delivery service is an example of ideation being used to address the question of how to serve consumers more efficiently.

Ideation is frequently part of what is known as the “design process,” which is the process of developing a plan for producing anew product or creating a new operating system. It may also include detailing or mapping out precisely how a new system or process will be implemented.

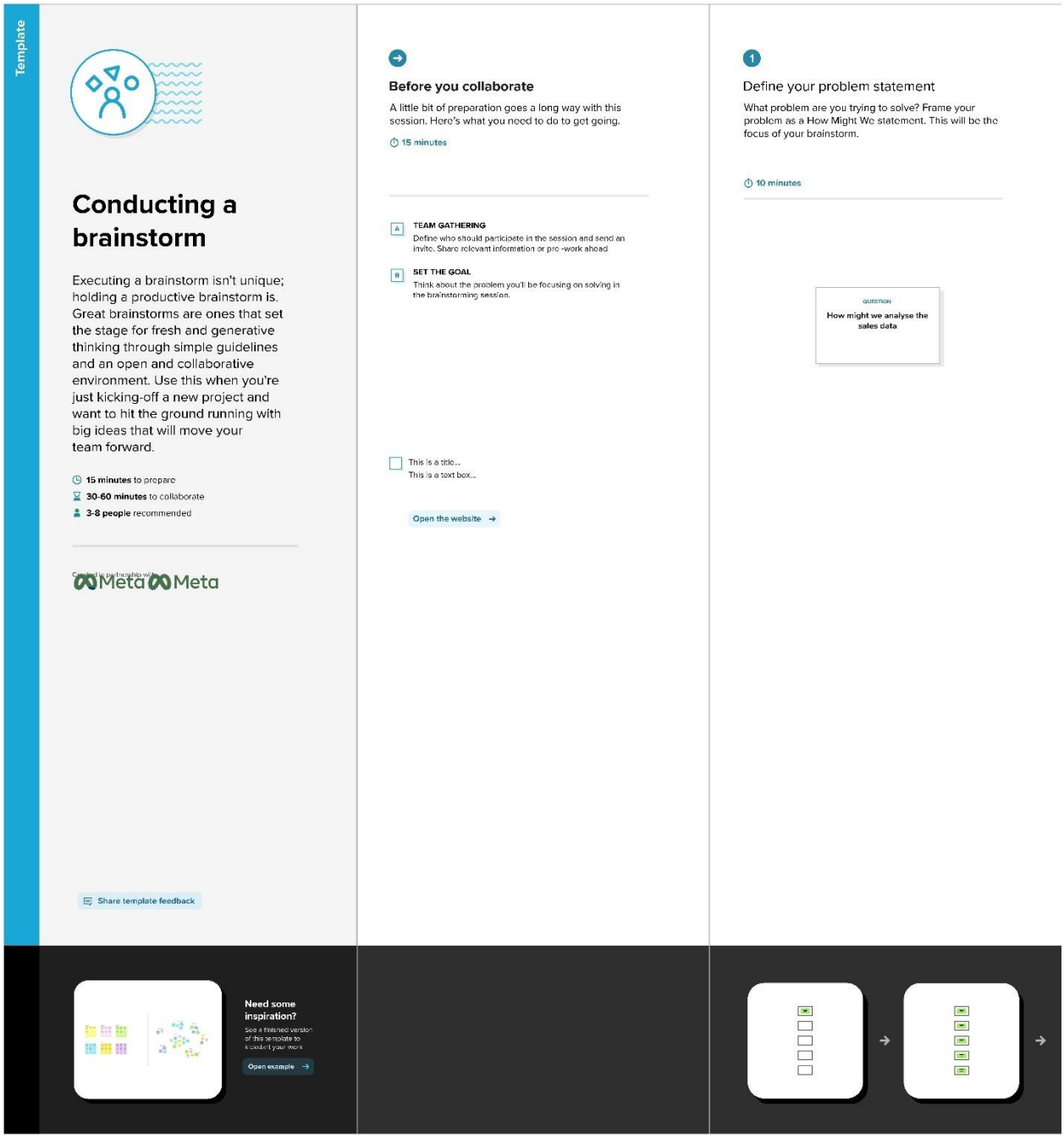


FIG 3.3 IDEATION & BRAINSTORMING

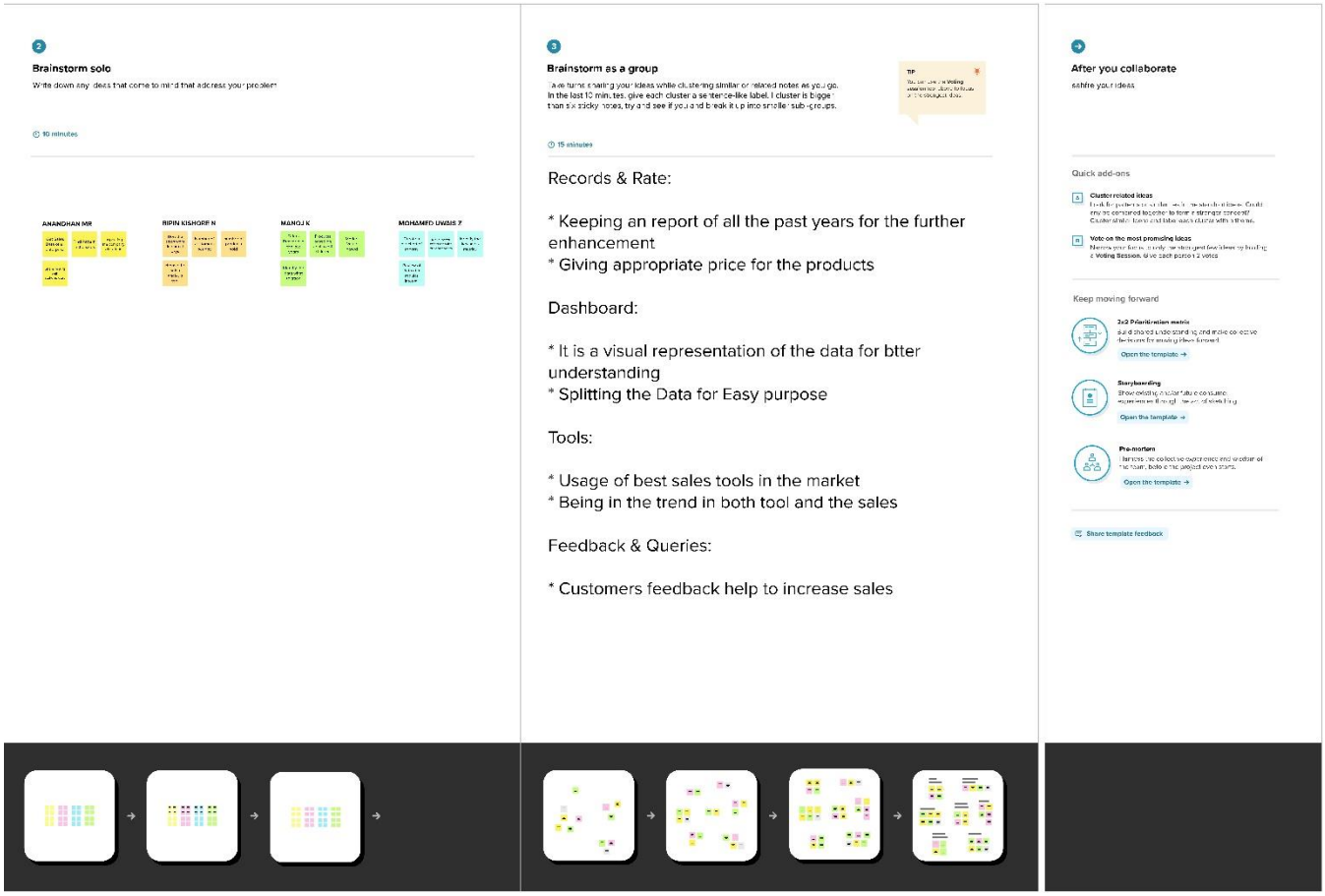


FIG 3.4 BRAINSTORM, IDEA LISTING AND GROUPING

3.3 PROPOSED SOLUTION

Identifying possible solutions is part of logical problem-solving* and, as such, is an important strategy in proposal writing. Remember that the one solution you're proposing may not seem obvious or feasible to the decision-makers to whom the proposal is addressed, so it's good strategy on your part to show that you've considered many possibilities before choosing one.Your proposed solution section should offer your solution specifically, with enough detail so that your reader understands exactly what you're proposing. Indicate how your proposed solutionwill solve the problem and provide tangible benefits. Specifically, explain how it will meet the objectives and abide by the constrains outlined in the problem definition. Give concrete examples. Show the specific differences between "how things are now" and "how they could be." Be as logical as possible. Emphasize the results, benefits, and feasibility of your proposed idea. Also use your criteria, developed as you considered possible solutions, to analyze your proposed solution against the other possible solutions.

This is where your pros and cons come in – you can use your brainstorming and idea development to create the evidence to back up your particular solution and prove that it's better than the others. Show that your proposed solution is more cost effective, easier to implement, etc. than other proposed solutions. Make sure, in the proposed solution section, to focus on "what" your solution is and "why" it is the best.

S.No.	Parameter	Description
1.	Problem Statement(Problem to be solved)	Shopping online is currently the need of the hour. Because of this COVID, it's not easy to walk in a store randomly and buy anything you want. So, try to understand a few things like, Customer Analysis and Product Analysis of this Global Super Store.
2.	Idea / Solution description	The described solution is by using IBM cosign we can display all the records and previous year global sales of product names, category and sub category as a graphical representation.
3.	Novelty / Uniqueness	we are going to provide discounts to the customers to increase the sales by providing free doorstep delivery of products to customers.
4.	Social Impact / Customer Satisfaction	Customershould know the available products and nearest location of the shops which gives the idea to customer for purchase.
5.	Business Model (Revenue Model)	This method focuses on the actual sales numbers from the customers. This helps to determine which products are topper formers and multiplying the shop and increasing the product quantity.
6.	Scalability of the Solution	Using this approach, the price of products across the world are kept same so the customers will be reliable.

3.4 PROBLEM SOLUTION FIT

The Problem-Solution Fit canvas is based on the principles of Lean Startup, LUM (Lazy User Model) and User Experience design. It helps entrepreneurs, marketers and corporate innovators identify behavioural patterns and recognize what would work and why. It is a template to help identify solutions with higher chances of solution adoption, reduce time spent on testing and get a better overview of the current situation.

My goal was to create a tool that translates a problem into a solution, taking into account customer behaviour and the context around it. of the existing canvases or frameworks were giving me an overview and insight into the real customer situation during his/her decision-making process. With this template you will be able to take impigtant information into consideration at an earlier stage and look at problem solving in depth. It increases your chances of finding problem- solution and product-market fit.

It helps you to:

• Solve complex problems in a way that fits the state of your customers.

• Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behaviour

• Sharpen your communication and marketing strategy with the right triggers and messaging.

• Increase touch-points with your company by finding the right problem behaviour fit and building trust by solving frequent annoyances, or urgent or costly problems.

• Understand the existing situation in order to improve it for your target group.

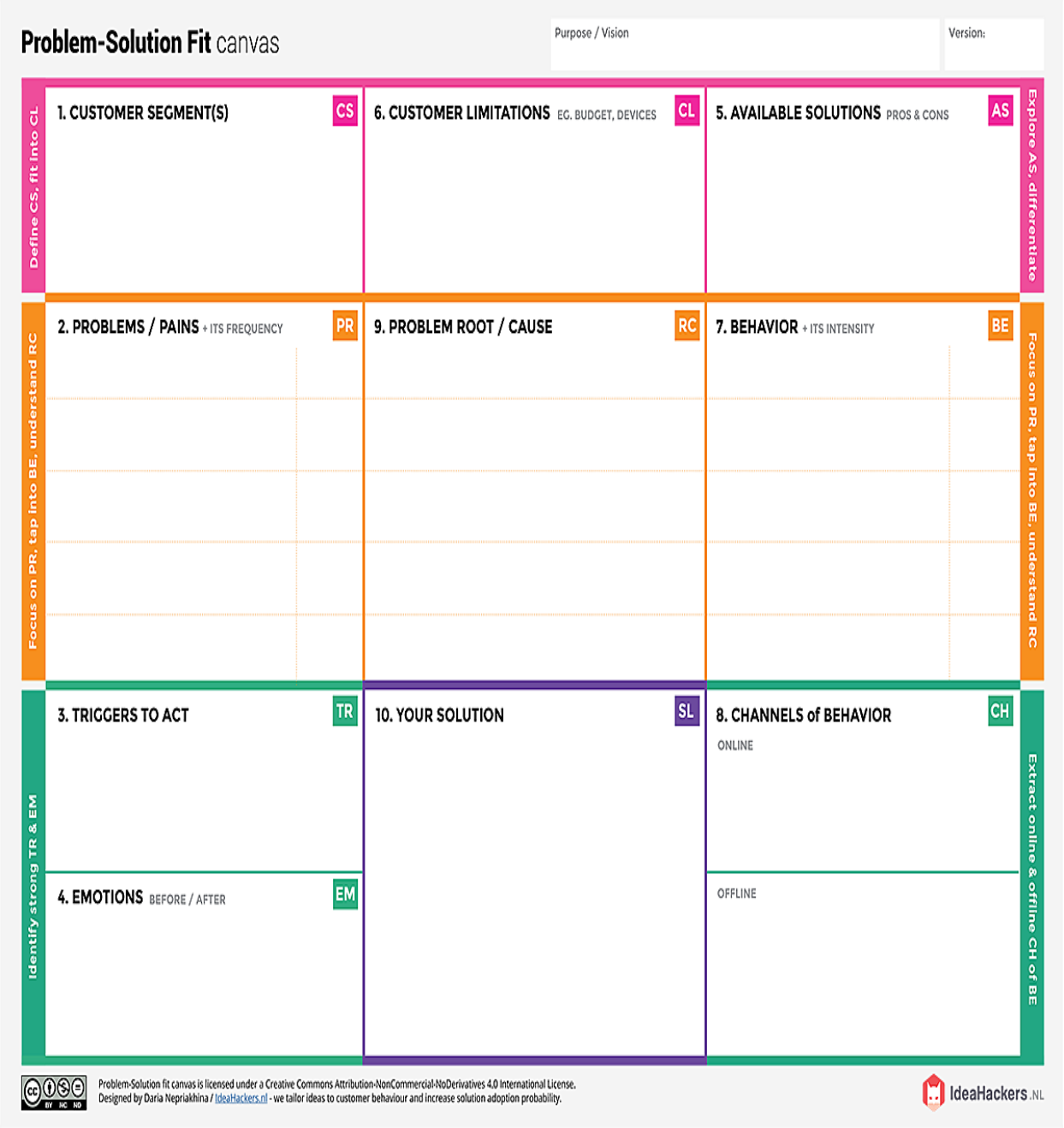


FIG 3.6 PROBLEM SOLUTION FIT

GLOBAL SALES DATA ANALYTICS
TEAM ID: PNT2022TMD28374

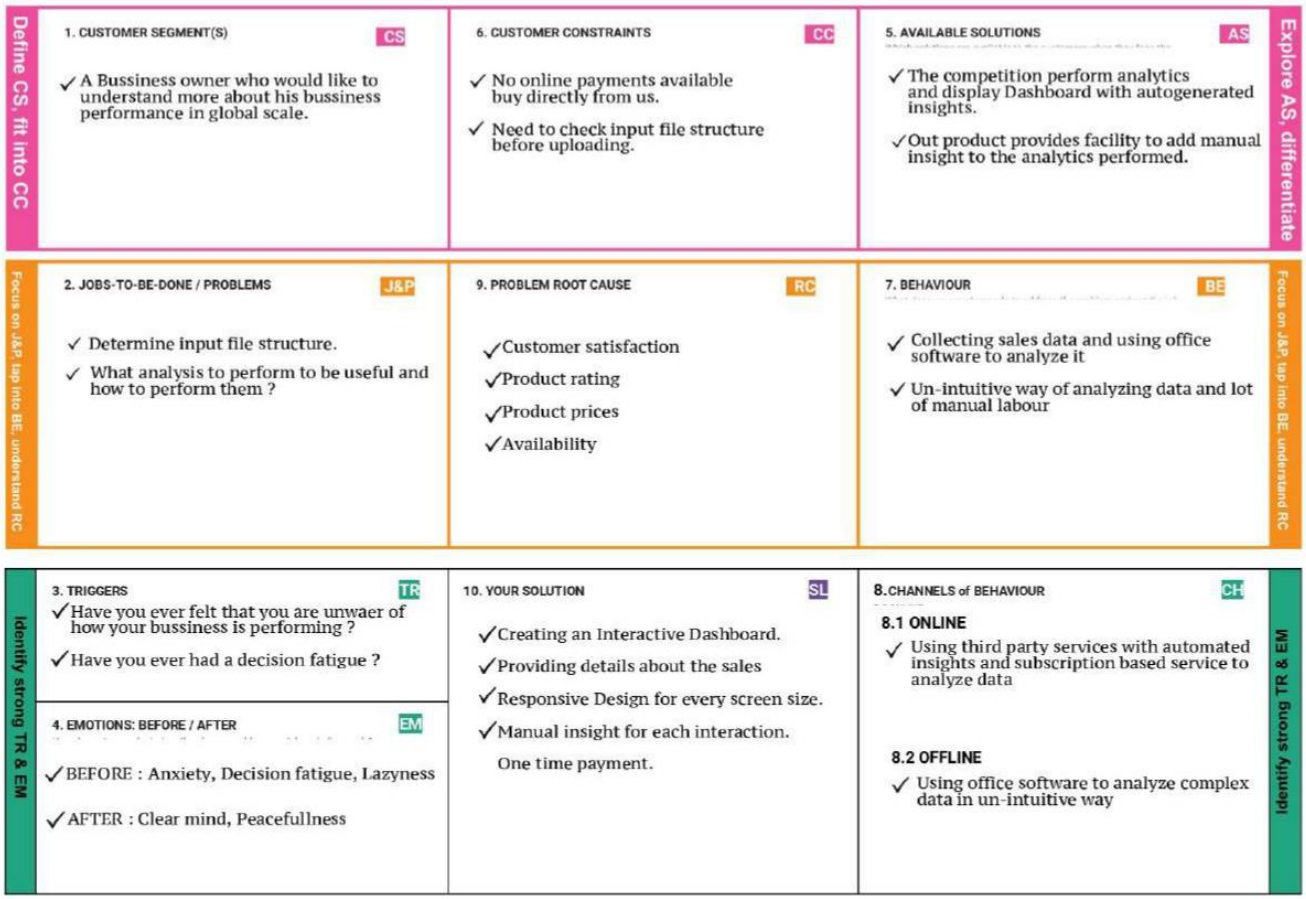


FIG 3.7 PROBLEM FIT FOR GLOBAL SALES DATA ANALYTICS

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

Functional requirements are product features or functions that developers must implement to enable users to accomplish their tasks. So, it's important to make them clear both for the development team and the stakeholders. Generally, functional requirements describe system behaviour under specific conditions.

For example: The system sends an approval request after the user enters personal information. A search feature allows a user to hunt among various invoices if they want to credit an issued invoice. The system sends a confirmation email when a new user account is created.

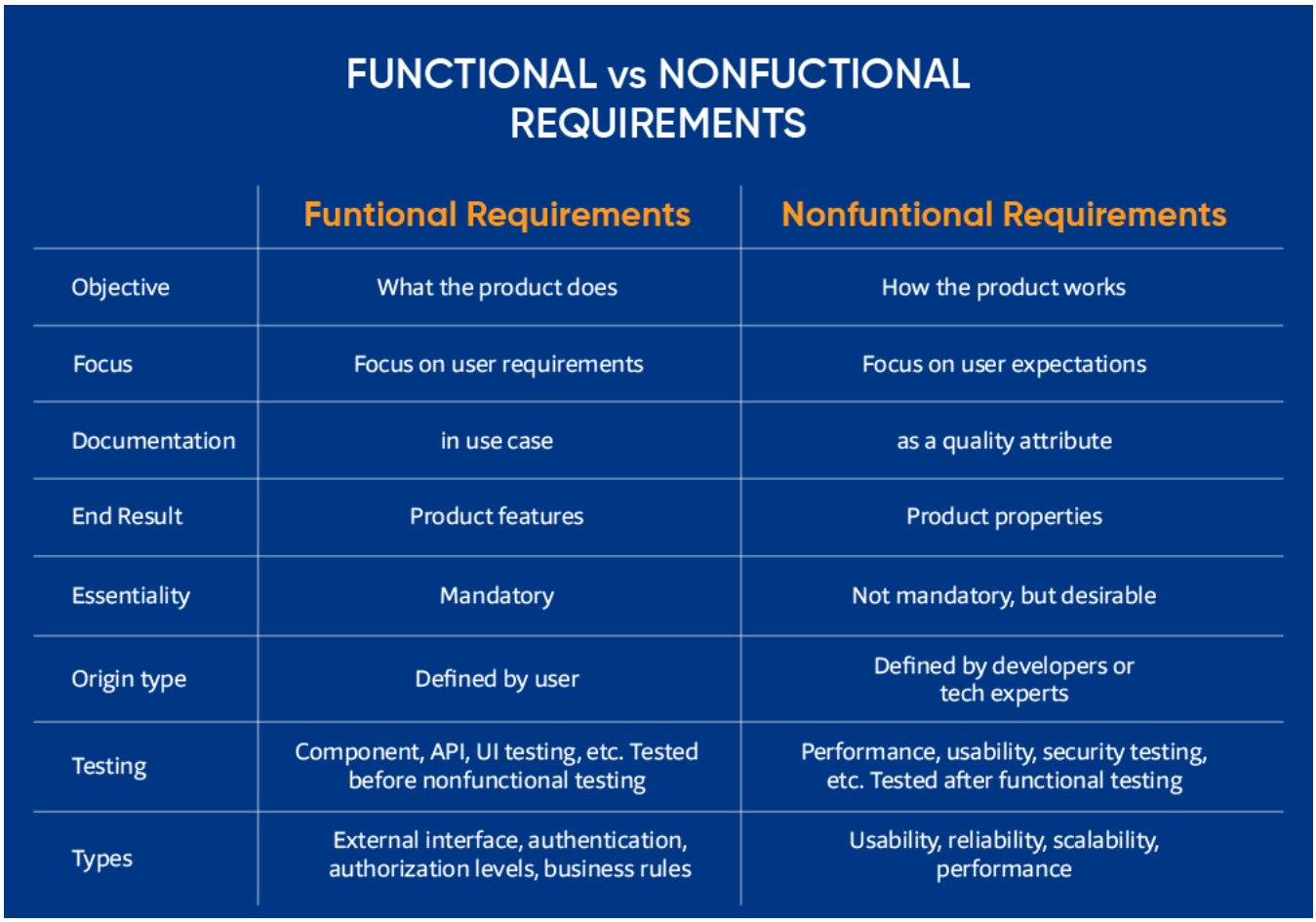


FIG 4.1 FUNCTIONAL vs NON-FUNCTIONAL

4.2 NON-FUNCTIONAL REQUIRMENTS

Non-functional requirements**,** not related to the system functionality, rather define how the system should perform. Some examples are: The website pages should load in 3 seconds with the total number of simultaneous users <5 thousand. The system should be able to handle 20 million users without performance deterioration. Here's a brief comparison and then we'll proceed to a more in-depth explanation of each group.

FR No.	**Functional Requirement(Epic)**	**Sub Requirement (Story/Sub-Task)**
FR-1	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Login	Login via Email and password
FR-4	User uploading data(administrati ve)	To store the dataset through the cloud
FR-5	End user benefits	Getting higher state of efficiency and alsoto know entire data analysis

FIG 4.2 FUNCTIONAL REQUIREMENT

FR No.	Non Functional Requirement	Description
NFR-1	Usability	Optimized resources and it can be used byeveryone
NFR-2	Security	It has securable because it has end to endencryption
NFR-3	Reliability	It has high reliability based on development.
NFR-4	Performance	It has high state of performance and efficiency.
NFR-5	Availability	It has available in all platforms and websites.
NFR-6	Scalability	The ability of a hardware and software parallel System to exploit increasing computing resourcesefficiency in the analysis of the (very)Iarge datasets

FIG 4.3 NON- FUNCTIONAL REQUIREMENT

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAM

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyse an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually "say" things that would be hard to explain in words, and they work for both technical and non-technical audiences, from developer to CEO. That's why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

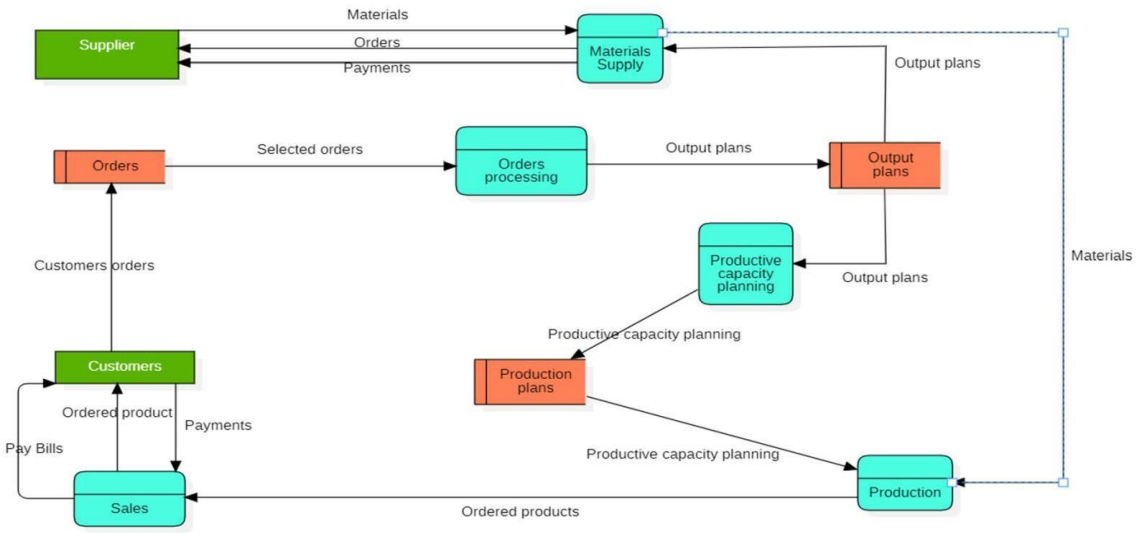


FIG 5.1 DATA FLOW DIAGRAM

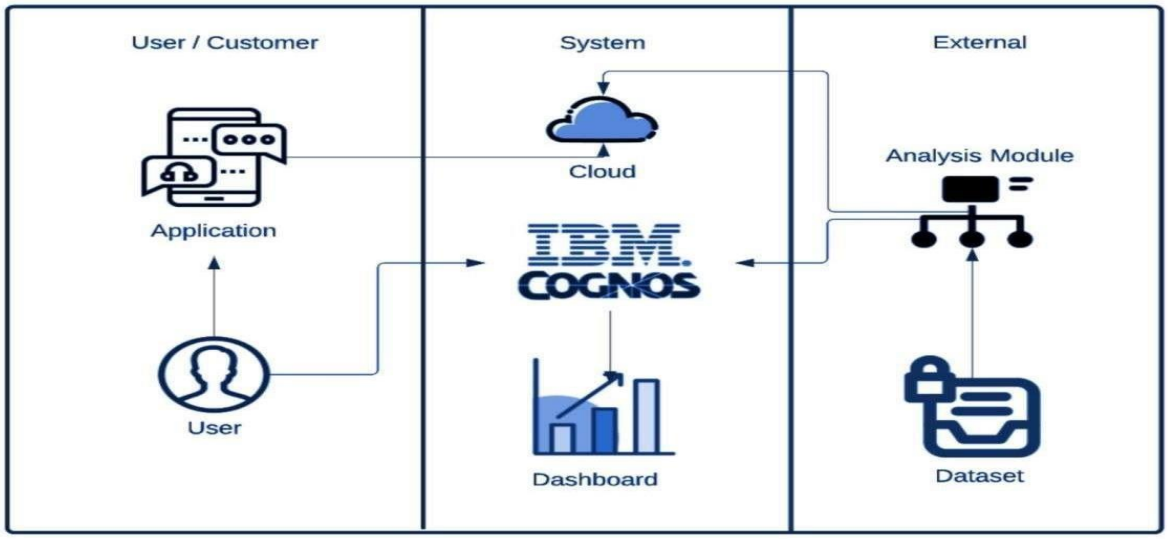


FIG 5.2 DATA FLOW DIAGRAM FOR GLOBAL SALES DATA ANALYTICS

5.2 SOLUTION AND TECHNICAL ARCHITECTURE

Solution architecture is the building block for an overall enterprise software solution that addresses specific problems and requirements. As the project size increases, the team becomes distributed globally. It is required to have a solution architecture in place for long-term sustainability and a solid foundation. Solution architecture addresses various solution needs, keeping the business context intact. It specifies and documents technology platforms, application components, data requirements, resource requirements, and many important non-functional requirements such as scalability, reliability, performance, throughput, availability, security, and maintainability. Solution architecture is vital for any industry and its solution. In the absence of solution architecture, there is a chance that software development could fail; projects can get delayed, get over budget, and not deliver enough functionalities.

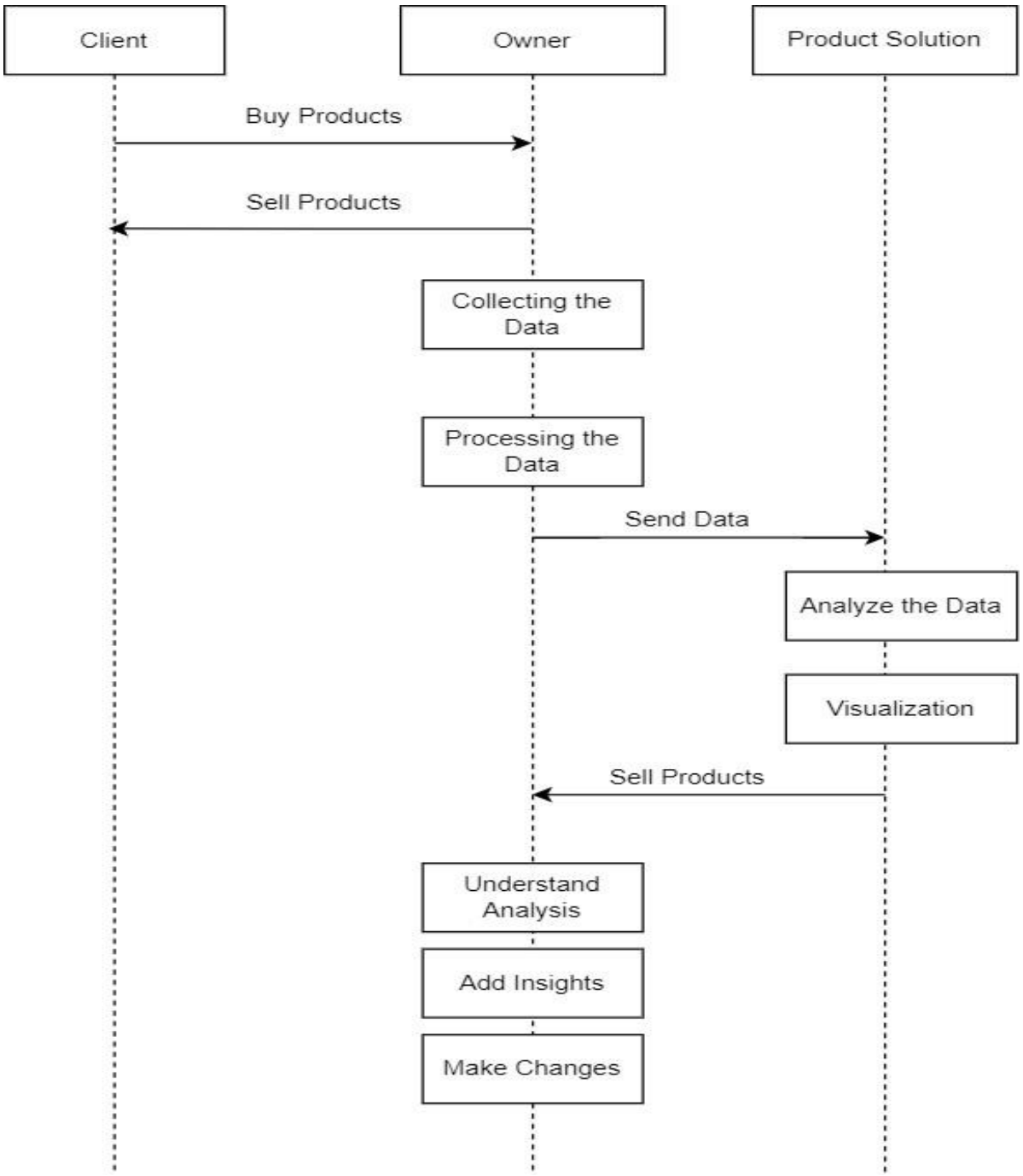


FIG 5.3 SOLUTION ARCHITECTURE

Technical Architecture is the name of the total concept that is applied to the IT Infrastructureof an organization. IT Infrastructure is a coherent set of interconnected hardware and software, like networks, clouds, servers, clients, printers, tablet PC, smartphones. The IT Infrastructure ofan organization can be small, one computer, but also immense, like a data Center of a banking company. Big IT Infrastructures also cost millions of dollars to keep operational (available) for their users. Whether your IT Infrastructure is big or small, the whole company depends on it. The business owner demands four things: the IT Infrastructure must be strong (constructive) to withstand calamities, it must flexible so it can be changed if new demands of technologies arise (adaptive), it must be fit to service employees and clients for the job to be done (operative) and it must be appealing and inviting to use it (decorative). These top-level requirements are the basis for the architect to design a total concept with technology concepts or IT Infrastructure concepts. There are thousands of technology concepts that can be made part of a technology architecture.

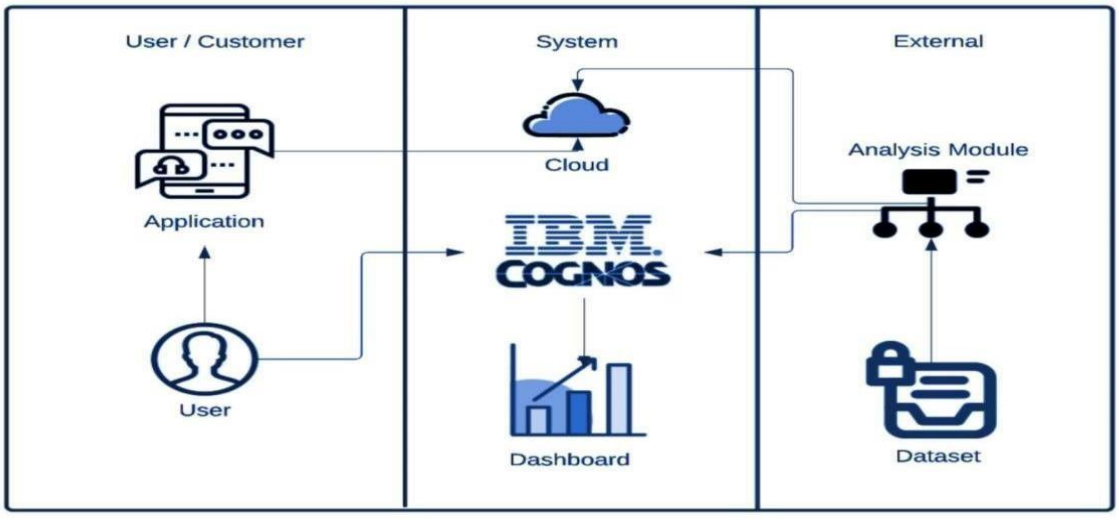


FIG 5.4 TECHNICAL ARCHITECTURE

5.3 USER STORIES

A user story is a tool used in Agile software development to capture a description of a software feature from an end-user perspective. A user story describes the type of user, what they want and why. A user story helps to create a simplified description of a requirement.

User stories are often recorded on index cards, on Post-it notes, or in project management software. Depending on the project, user stories may be written by various stakeholders suchas clients, users, managers or development team members. Requirements always change as teams and customers learn more about the system as the project progresses. It's not exactly realistic to expect project teams to work off static requirements list and then deliver functional software months later. With user story approach, we replace big upfront design witha "just enough" approach. User stories reduce the time spent on writing exhaustive documentation by emphasizing customer-centric conversations. Consequently, user stories allow teams to deliver quality software more quickly, which is what customers prefer.

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 confirmation email & click confirm	High	Sprint-1
	Login	USN-3	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-4	As a user, I can create the visualization by using the dashboard in the application.		High	Sprint-3

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
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
Administrator	Mail	USN-1	It can be used by easily access and responsible.	I can access by easily through application.	High	Sprint-1

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint planning is an event in scrum that kicks off the sprint. The purpose of sprint planning isto define what can be delivered in the sprint and how that work will be achieved. Sprint planning is done in collaboration with the whole scrum team.

In scrum, the sprint is a set period of time where all the work is done. However, before you can leap into action you have to set up the sprint. You need to decide on how long the time box is going to be, the sprint goal, and where you're going to start. The sprint planning session kicks offthe sprint by setting the agenda and focus. If done correctly, it also creates an environment where the team is motivated, challenged, and can be successful. Bad sprint plans can derail the team by setting unrealistic expectations.

During sprint planning it is easy to get ‘bogged down’ in the work focusing on which task shouldcome first, who should do it, and how long will it take. For complex work, the level ofinformation you know at the start can be low, and much of it is based on assumptions. Scrum is an empirical process, meaning that you can’t plan upfront, but rather learn by doing, and then feed that information back into the process.

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can access the application by entering credential and confirming the password.	2	High	Manoj K Mohammed Uwais Z
Sprint-1		USN-2	As a user, I will receive the credential to access the application	2	High	Anandhan MR Bipin Kishore N
Sprint-1	Login	USN-3	As a user, I can log into the application by entering the credential	2	Medium	Anandhan MR Manoj K
Sprint-2	Dashboard	USN-4	Once logged in , based on data fed during training phase an analysis is made. Once the gesture is displayed the data gets compared to the one trained and the output is displayed	4	High	Bipin Kishore N Anandhan MR Manoj K Mohamme d Uwais Z

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-2	Dataset	USN-5	As a user, I can feed and remove any sort of data	2	High	Anandhan MR Bipin Kishore N
Sprint-3	Notifications	USN-6	As a user, I can receive notification if the dataset is found similar to the one that is fed.	2	High	Manoj K Mohammed Uwais Z
Sprint-3		USN-7	As a user, I can check on the desired output.	2	Medium	Manoj K Mohammed Uwais Z
Sprint-4	Security	USN-8	As a user, I am assured for linking my datasets securely	4	High	Bipin Kishore N Anandhan MR Manoj K Mohammed Uwais Z

ESTIMATION

Estimation is a process to forecast these variables to develop or maintain software based on the information specified by the client. There are three main challenges faced during estimation i.e., Uncertainty, Self-knowledge, and Consistency of Method used for Estimation. Usage of standardized and scientific estimation methods for estimating size, effort, and schedule, helps towards maintaining minimal variance between the planned estimates and actual values thereby achieving maximum estimation accuracy. This provides a better client experience. All estimation needs for a project cannot be determined by a single method. It is important to have different methods of estimation for different stages.

Planning and Estimation in Agile projects bring a lot of focus on preparation and forecasting. Both these activities are done keeping business context in mind and measurable value delivery is committed to the client. Therefore, it is recommended to have required planning and estimation in Agile from the start of the project, in order to ensure better risk coverage and higher predictability.

VELOCITY

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint).

Let’s calculate the team’s average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

6.2 SPRINT DELIVERY SCHEDULE

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	3	6 Days	24 Oct 2022	29 Oct 2022	3	29 Oct 2022
Sprint-2	2	6 Days	31 Oct 2022	05 Nov 2022	2	05 Nov 2022
Sprint-3	3	6 Days	07 Nov 2022	12 Nov 2022	3	12 Nov 2022
Sprint-4	2	6 Days	14 Nov 2022	19 Nov 2022	2	19 Nov 2022

SPRINT 1

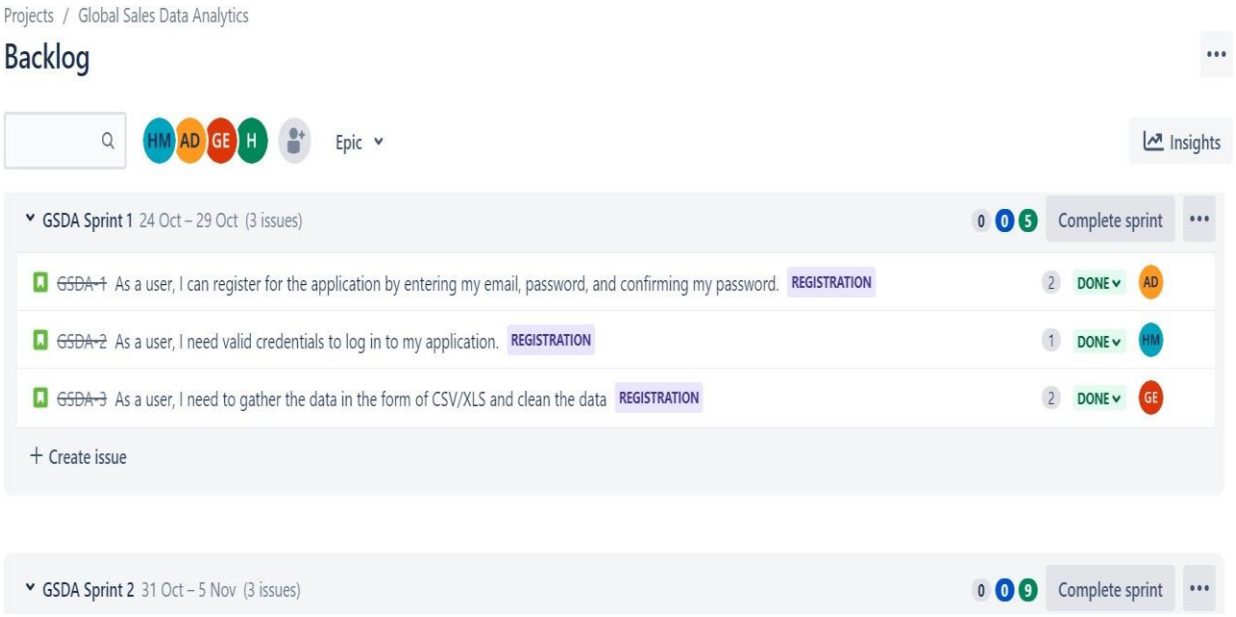


FIG 6.1 SPRINT 1 DELIVERY PLAN

SPRINT 2

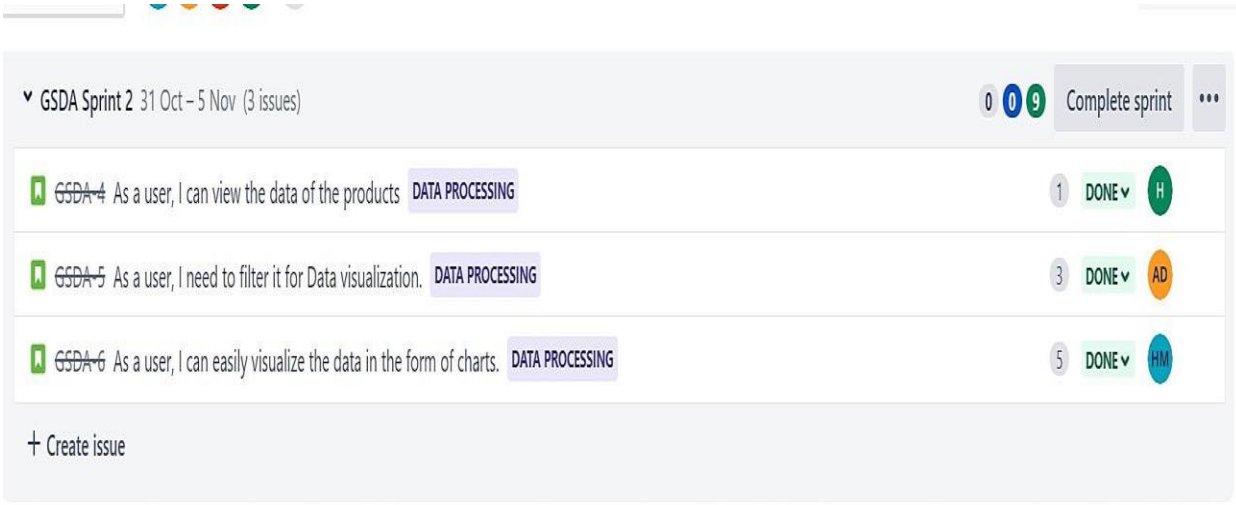


FIG 6.2 SPRINT 2 DELIVERY PLAN

SPRINT 3

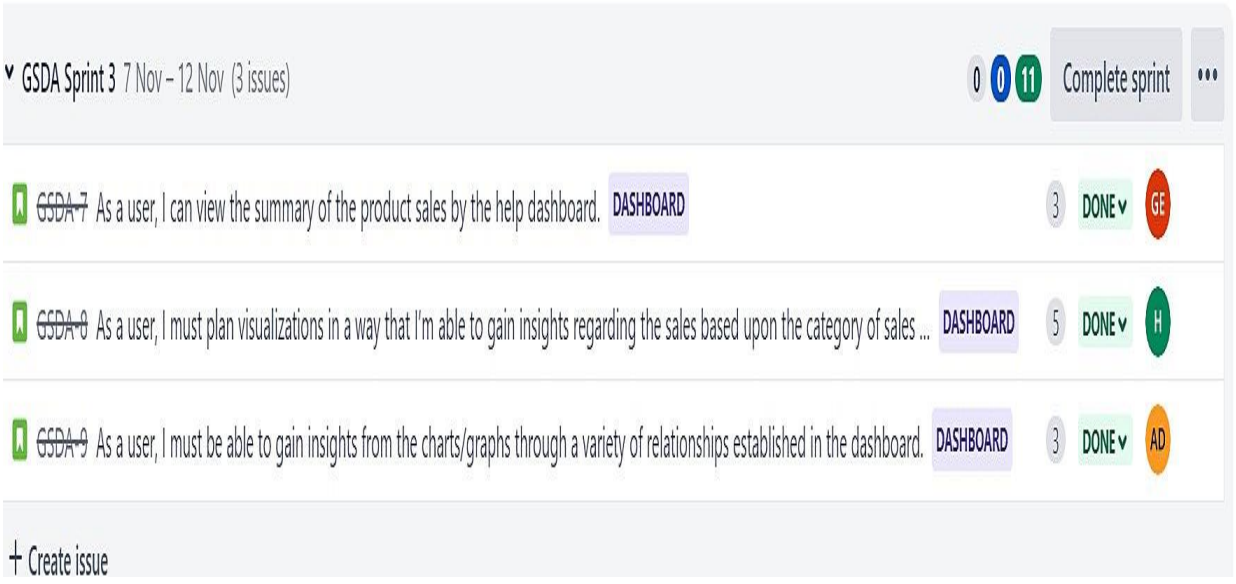


FIG 6.3 SPRINT 3 DELIVERY PLAN

SPRINT 4

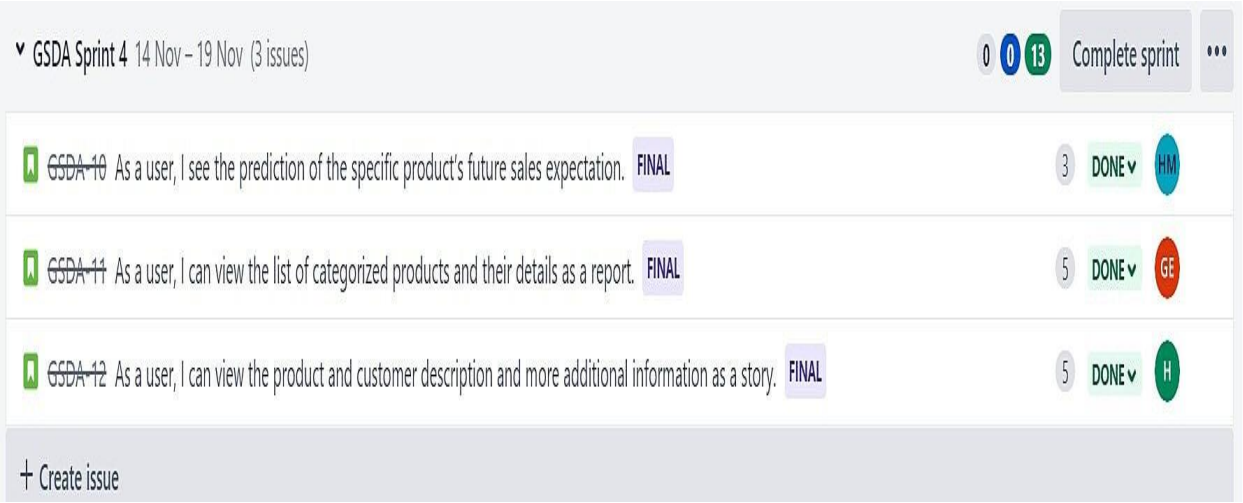
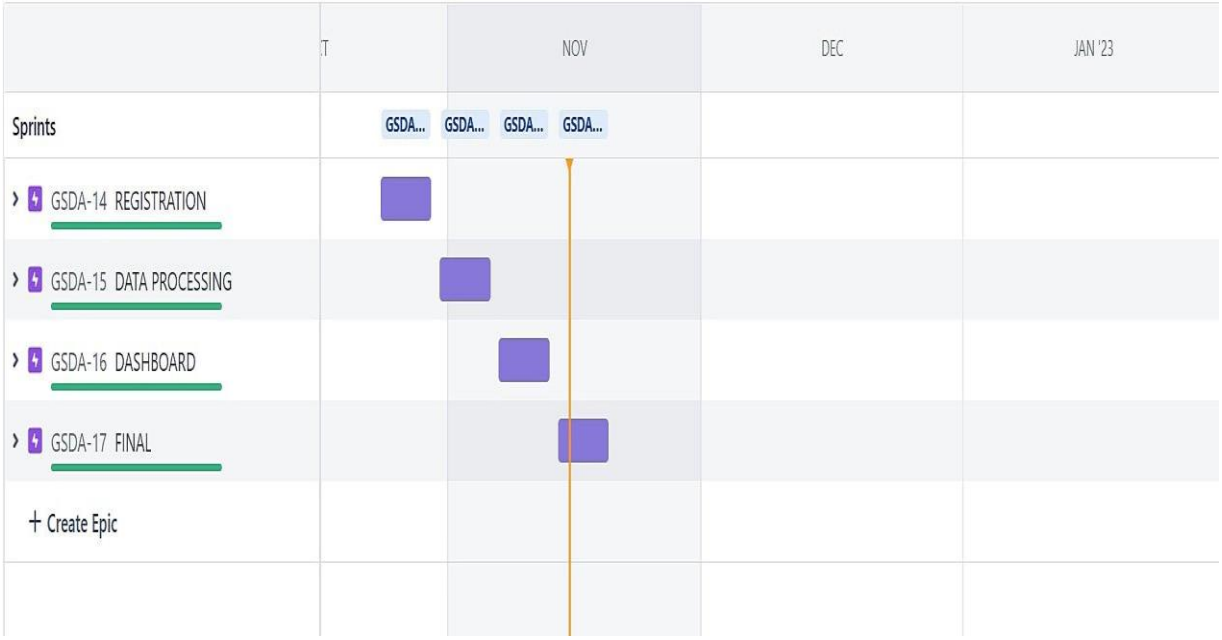


FIG 6.4 SPRINT 4 DELIVERY PLAN

ROADMAP



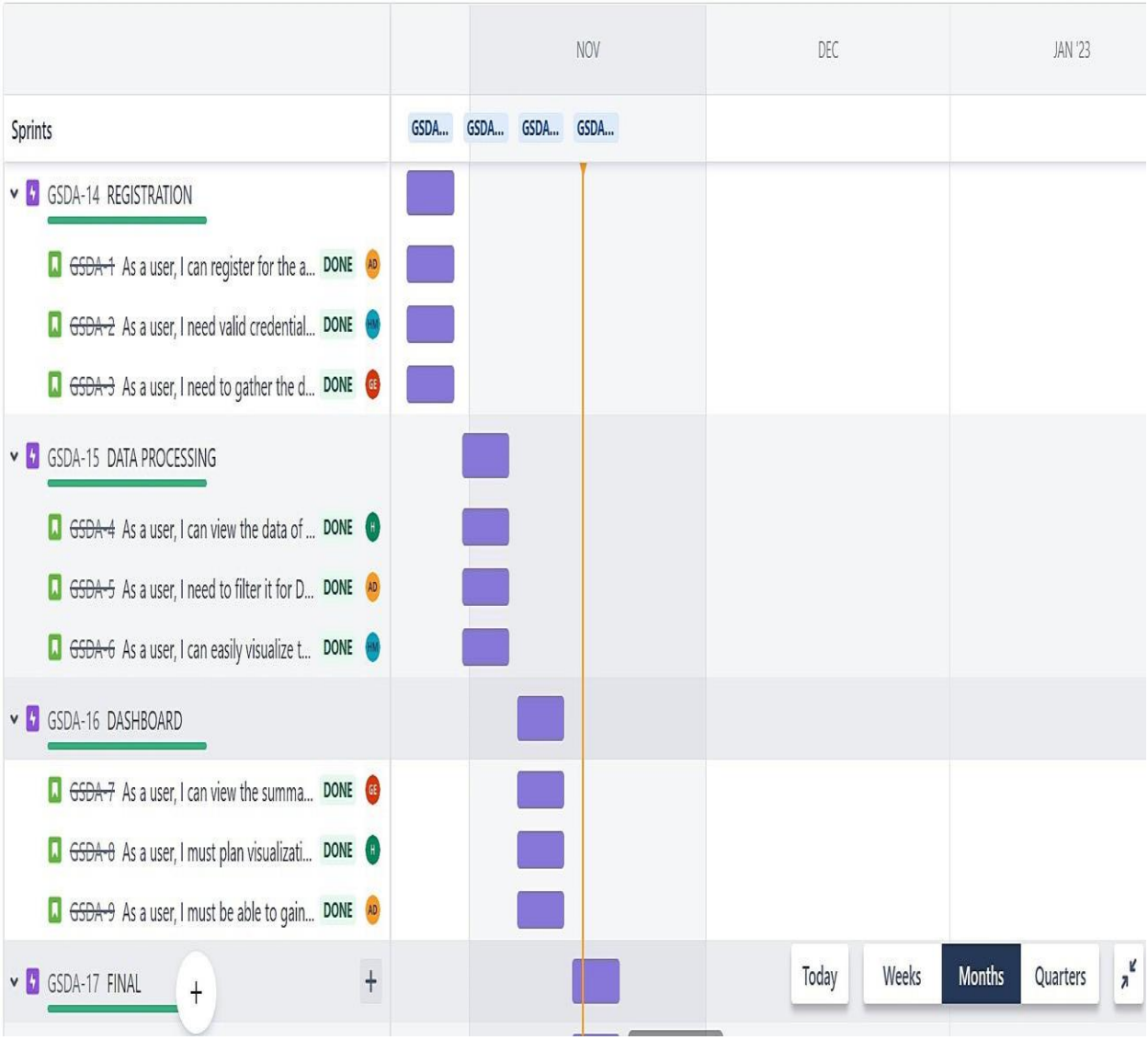


FIG 6.5 ROADMAP FOR DELIVERY PLAN

6.3 REPORT FROM JIRA

JIRA

Jira Software is part of a family of products designed to help teams of all types manage work.Originally, Jira was designed as a bug and issue tracker. But today, Jira has evolved into a powerful work management tool for all kinds of use cases, from requirements and test case management to agile software development.

BURNUP CHART

A burn up chart is a graph that shows project progress over time. There are two main lines shown on the chart: one for the total project work planned, and the other for tracking the work completed to date. By comparing the work your team has accomplished so far with the total amount of work planned, you can understand how efficiently they're working and better estimatehow long it will take to complete the work remaining.

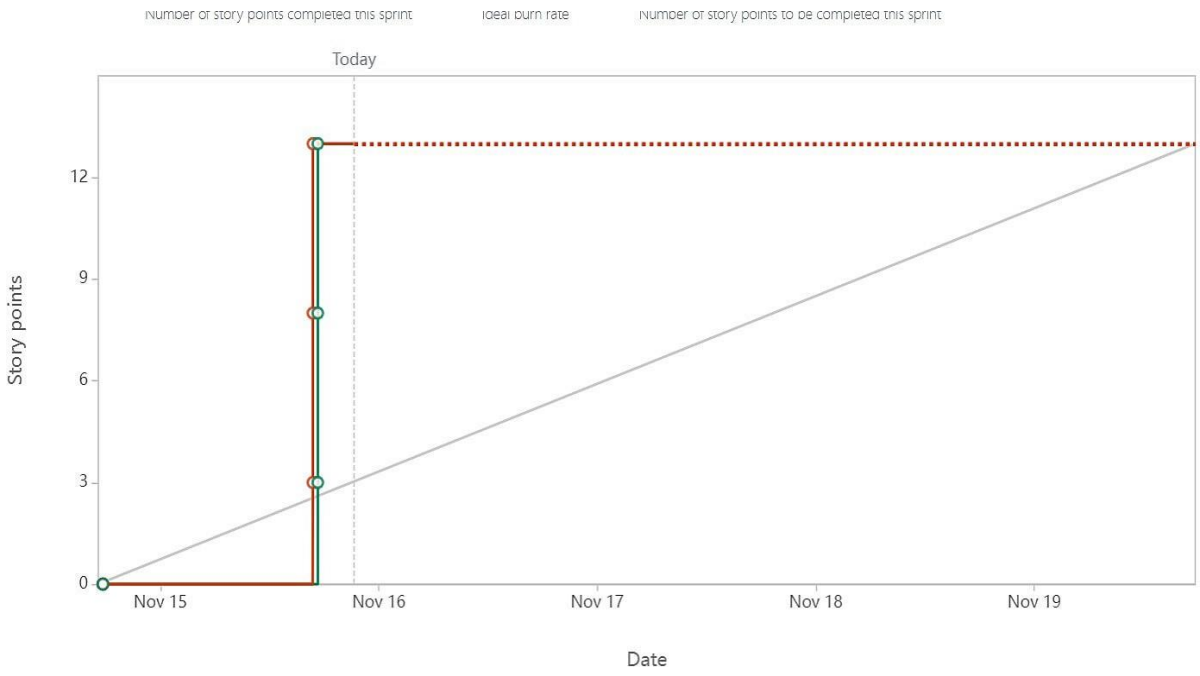


FIG 6.6 BURNUP CHART FOR SPRINT 1

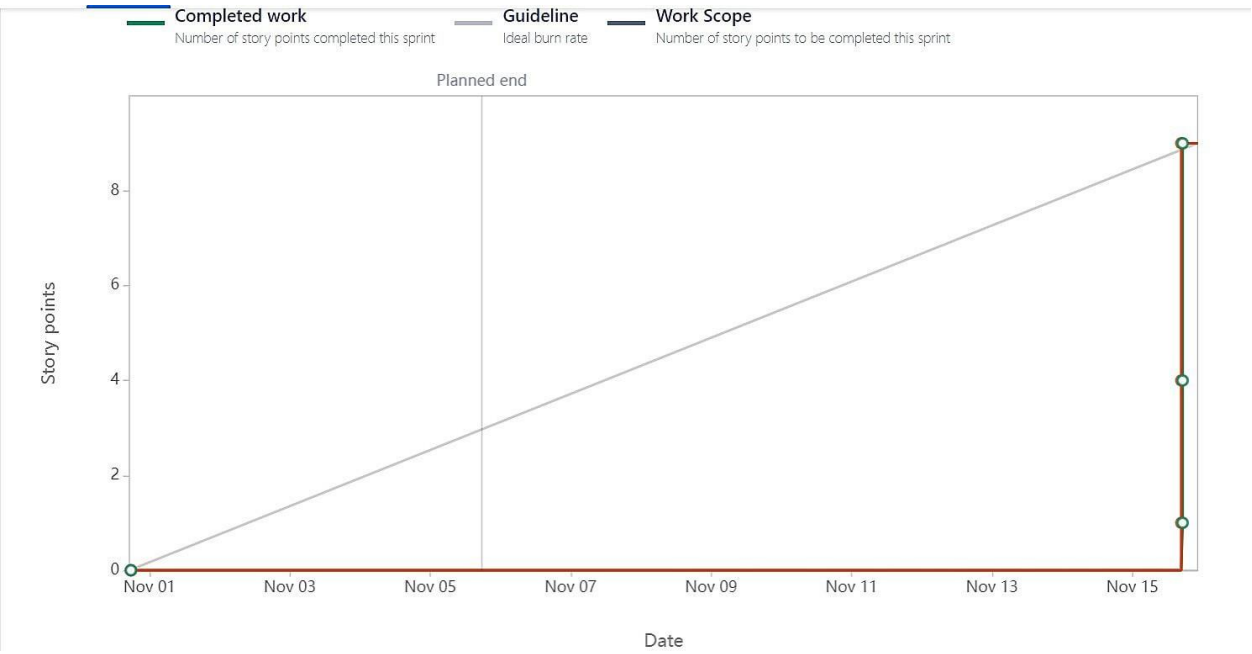


FIG 6.7 BURNUP CHART FOR SPRINT 2

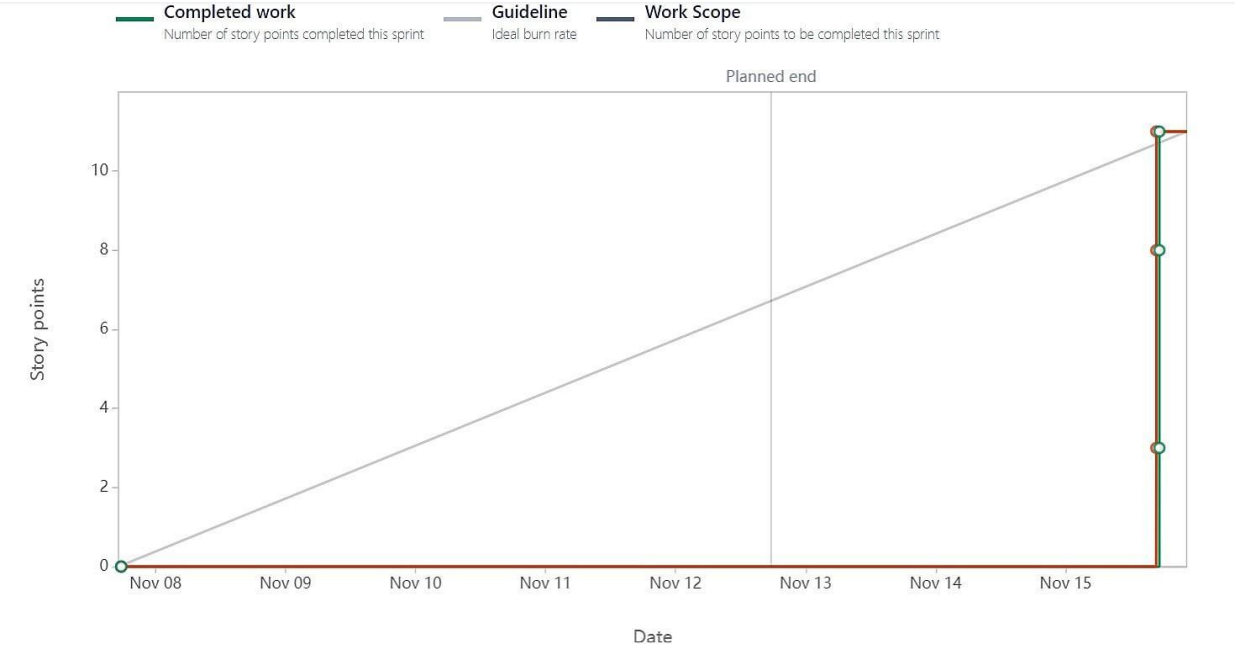


FIG 6.8 BURNUP CHART FOR SPRINT 3

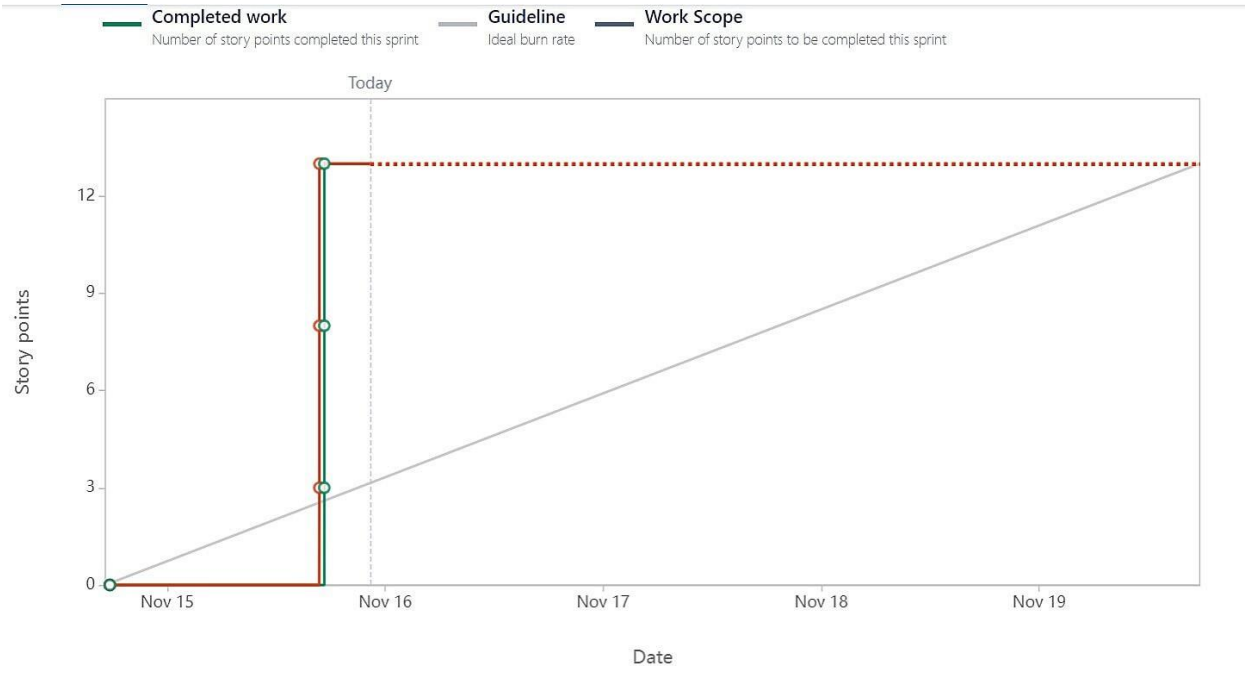


FIG 6.9 BURNUP CHART FOR SPRINT 4

BURNDOWN CHART

A burndown chart shows the amount of work that has been completed in an epic or sprint, and the total work remaining. Burndown charts are used to predict your team's likelihood of completing their work in the time available. They're also great for keeping the team aware of any scope creep that occurs. This report shows the amount of work to be done in a sprint. It can be used to track the total work remaining in the sprint, and to project the likelihood of achieving the sprint goal. By tracking the remaining work throughout the sprint, a team can manage its progress, and respond to trends accordingly. For example, if the burndown chart shows that the team may not reach the sprint goal, then they can take the necessary actions to stay on track.

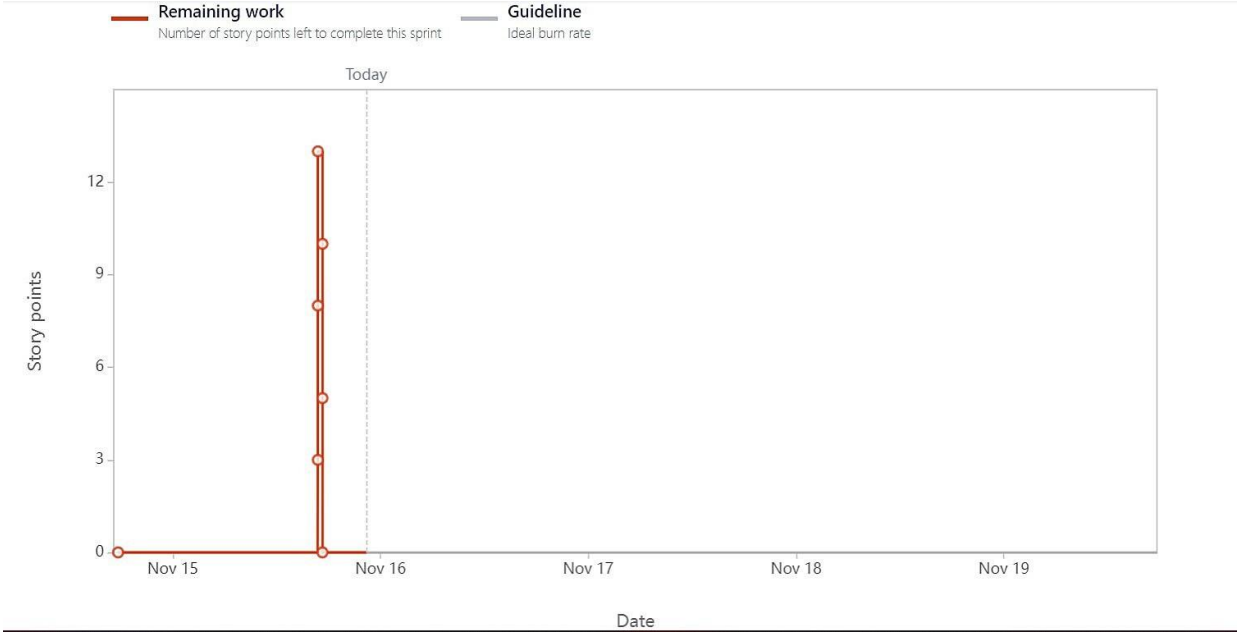


FIG 6.10 BURNDOWN CHART FOR SPRINT 1

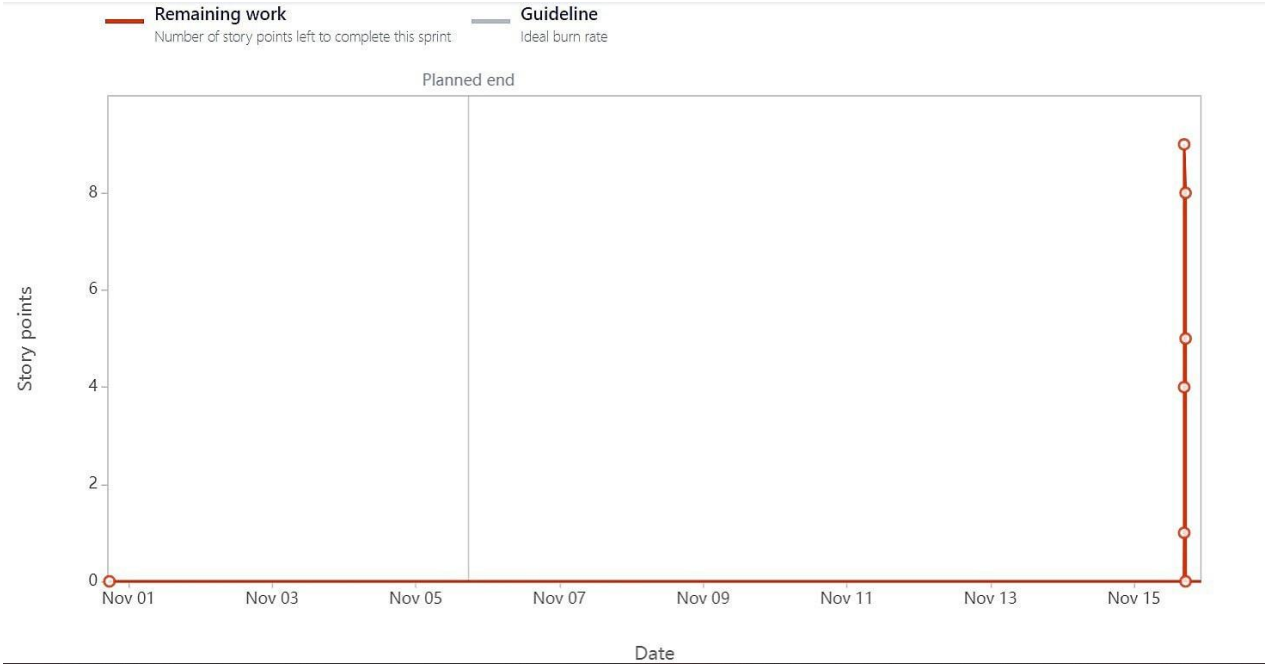


FIG 6.11 BURNDOWN CHART FOR SPRINT 2

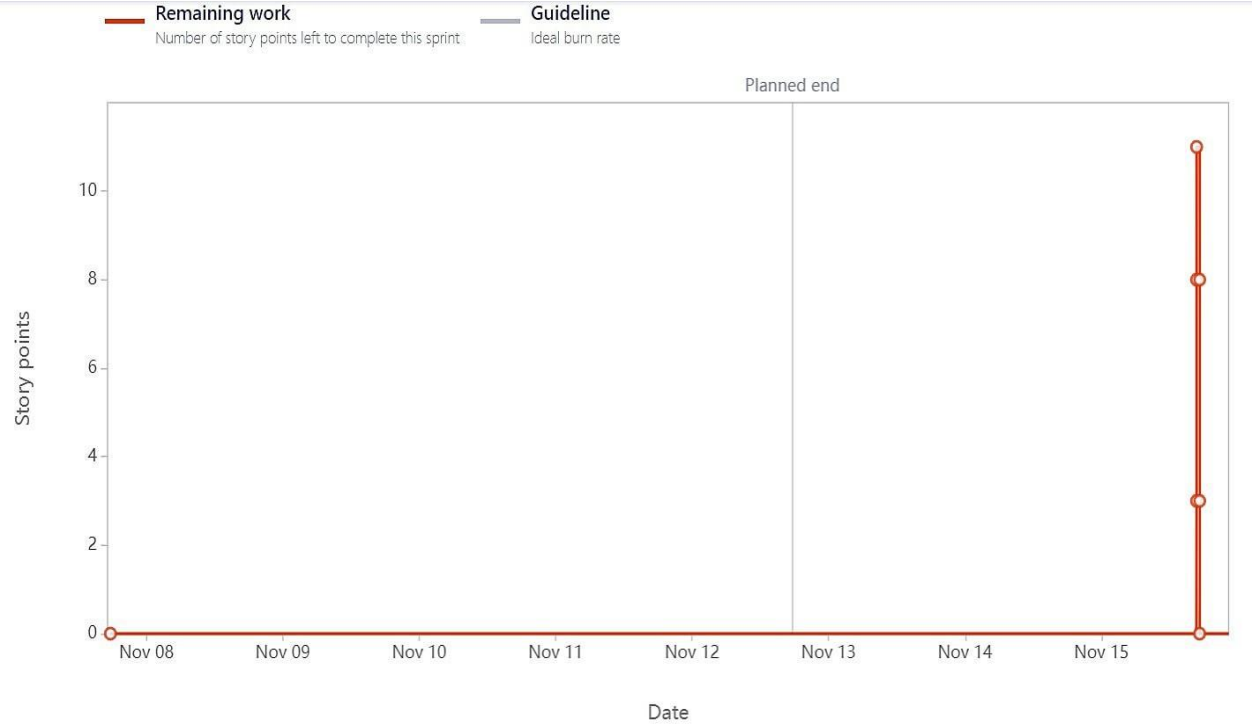


FIG 6.12 BURNDOWN CHART FOR SPRINT 3

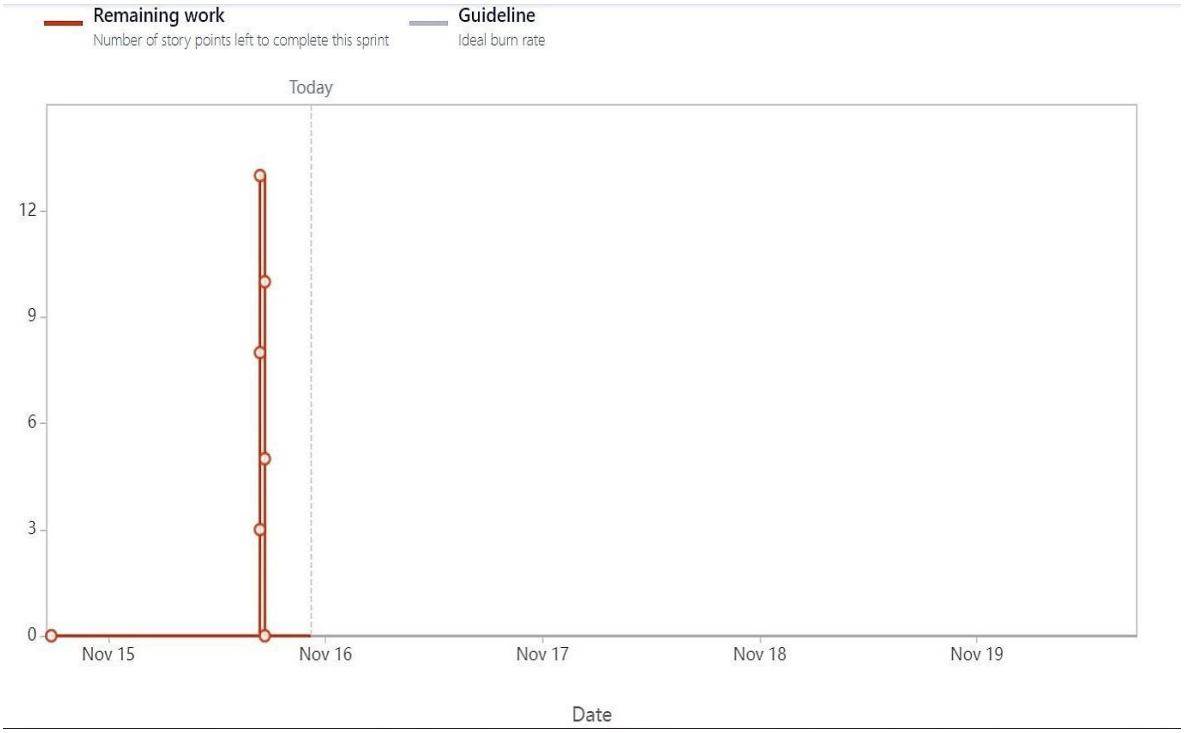


FIG 6.13 BURNDOWN CHART FOR SPRINT 4

7. CODING & SOLUTIONS

dashboard.html

```
<!DOCTYPE html>
<html lang="en">
<head>
 <link rel="stylesheet" href="index.css">
</head>
<body>
  <div class="whole-page">
<div class="navbar">
   <div class="one">
        <p>Global Sales Data Analytics</p>
       </div>
       <div class="two">
       </div>
       <div class="three">
        <a href="dashboard.html">Dashboard</a>
        <a href="report1.html">Report</a>
```

```
        <a href="story.html">Story</a>
      </div>
    </div>
    <div class="pic">
      <div>
        <img src="dashboard.JPG">
      </div>
    </div>
  </div>
</body>
</html>
```

report.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <link rel="stylesheet" href="index.css">
</head>
```

```
 <body>
  <div class="whole-page">
<div class="navbar">
   <div class="one">
       <p>Global Sales Data Analytics</p>
      </div>
      <div class="two">
      </div>
      <div class="three">
       <a href="dashboard.html">Dashboard</a>
       <a href="report.html">Report</a>
       <a href="story.html">Story</a>
      </div>
    </div>
    <div class="pic">
     <div>
      <img src="dash1.JPG">
     </div>
```

```
    <div>
      <img src="dash2.JPG">
    </div>
    <div>
      <img src="dash3.JPG">
    </div>
   </div>
  </div>
</body>
</html>
```

story.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <link rel="stylesheet" href="index.css">
</head>
<body>
```

```
<div class="whole-page">
 <div class="navbar">
    <div class="one">
     <p>Global Sales Data Analytics</p>
    </div>
    <div class="two">
    </div>
    <div class="three">
     <a href="dashboard.html">Dashboard</a>
     <a href="report1.html">Report</a>
     <a href="story.html">Story</a>
    </div>
 </div>
 <div class="pic">
  <div>
    <img src="story.JPG">
  </div>
 </div>
```

```
  </div>
</body>
</html>
```

index.css

```
.whole-page{
  height:2200
  px;
  display:grid;
  grid-template-rows: 1fr 10fr;
}
.navbar{
  background-color: rgb(255, 255,
  255);display: grid;
  grid-template-columns: 4fr 5fr 5fr;
}
.pic{
  background-color: rgb(255, 255,
  255);display: grid;
```

```
  grid-template-rows:1fr 1fr 1fr ;
}
img{
  width:100
  %;
}
.one{
  background-color: rgb(255, 255,
  255);text-align: center;
  margin-top: 30px;
}
.two{
  background-color: rgb(255, 255, 255);
}
.three{
  background-color: rgb(255, 255,
  255);display:grid;
  grid-template-columns: 1fr
  1fr 1fr;text-align: center;
```

```
  margin-top: 30px;
}
p{
  font-family:sans-
  serif;font-size:
  25px;
}
a{
  font-family:sans-
  serif;font-size:
  25px;
  text-decoration:
  none;color:black;
}
a:hover{
  color:blu
  e;
}
```

8. TESTING

Testing is the process of verifying the accuracy and completeness of project deliverables before they are released to the customer. It is an essential part of quality assurance and helps to ensure that the final product meets the customer's expectations. There are generally four phases of testing in a project: unit testing, integration testing, system testing, and acceptance testing. Each of these phases has its own purpose and focuses on different aspects of the project.

Testing is a critical component of quality management. It is the process of verifying that a project meets its requirements and that it performs as expected. Testing helps ensure that the project is fit for purpose and that it will meet the needs of the customer or client.

8.1 TEST CASES

A test case is a set of actions performed on a system to determine if it satisfies software requirements and functions correctly. The purpose of a test case is to determine if different features within a system are performing as expected and to confirm that the system satisfies all related standards, guidelines and customer requirements. The process of writing a test case can also help reveal errors or defects within the system. Test cases are typically written by members of the quality assurance (QA) team or the testingteam and can be used as step-by-step instructions for each system test. Testing begins once the development team has finished a system feature or set of features. A sequence or collection oftest cases is called a test suite. A test case document includes test steps, test data, preconditions and the postconditions that verify requirements.

Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite
LoginPage_TC_OO1	Functional	Home Page	Verify user is able to see the Login/Signup popup when user clicked on My account button	Nil
LoginPage_TC_OO2	UI	Home Page	Verify the UI elements in Login/Signup popup	Nil
LoginPage_TC_OO3	Functional	Home page	Verify user is able to log into application with Valid credentials	Nil
LoginPage_TC_OO4	Functional	Login page	Verify user is able to log into application with InValid credentials	Nil
LoginPage_TC_OO4	Functional	Login page	Verify user is able to log into application with InValid credentials	Nil
LoginPage_TC_OO5	Functional	Login page	Verify user is able to log into application with InValid credentials	Nil
1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: chalam@gmail password: Testing123	Application should show 'Incorrect email or password ' validation message.		
1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter Invalid password in password text box 5.Click on login button	Username: chalam@gmail.com password: Testing123678686786876876	Application should show 'Incorrect email or password ' validation message.		

FIG 8.1 TEST CASES FOR REGISTRATION

8.2 USER ACCEPTANCE TESTING

User acceptance testing is the final testing stage in software development before production. It's used to get feedback from users who test the software and its user interface (UI). UAT is usually done manually, with users creating real-world situations and testing how the software reacts and performs. Test-case scenarios can also be automated, simulating a user experience. Due to the costliness of UAT and the complexity of combining manual and automated testing in this phase, it's important to prepare ahead and develop a plan.As a testing plan is created and a timeline is established, it's good to keep in mind some of the challenges that may occur during the process.

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issuesof 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	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	0	0	1	1
Totals	24	9	11	26	71

3. Test Case Analysis

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

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	51	0	0	51
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	4	0	0	4
Version Control	2	0	0	2

9. RESULTS

9.1 PERFORMANCE METRICS

Performance testing is a testing technique that determines the speed, scalability, and stability of an application under a given workload. It helps to ensure the quality of the software andmakes the application ready to be released into the market.

- Speed - The speed at which the application responds.
- Scalability - The maximum user load that the application can handle.
- Stability - The condition of the application under varying loads.

S.No.	Parameter	Screenshot / Values
1.	Dashboard design	No of Visualizations / Graphs - 7-8 visualization/6-7 graphs
2.	Data Responsiveness	Users and Analyst or Developers
3.	Amount Data to Rendered (DB2Metrics)	5 countries
4.	Utilization of Data Filters	Sales, profit, products, market rate and order id filtration
5.	Effective User Story	No of Scene Added - 30 user stories
6.	Descriptive Reports	No of Visualizations / Graphs - 4 visualizations/6 graph

10. ADVANTAGES & DISADVANTAGES

ADVANTAGES

Data analytics helps an organization make better decisions

Lot of times decisions within organizations are made more on gut feel rather than facts and data. One of the reasons for this could be lack of access to quality data that can help with better decision making. Analytics can help with transforming the data that is available into valuable information for executives so that better decisions can be made. This can be a source of competitive advantage if fewer poor decisions are made since poor decisions can have a negative impact on a number of areas including company growth and profitability.

Increase the efficiency of the work

Analytics can help analyze large amounts of data quickly and display it in a formulated manner to help achieve specific organizational goals. It encourages a culture of efficiency and teamwork by allowing the managers to share the insights from the analytics results to the employees. The gaps and improvement areas within a company become evident and actions can be taken to increase the overall efficiency of the workplace thereby increasing productivity.

The analytics keeps you updated of your customer behavioural changes

In today's world, customers have a lot of choices. If organizations are not tuned to customer desires and expectations, they can soon find themselves in a downward spiral. Customers tend to change their minds as they are continuously exposed to new information in this era of digitization. With vast amount of customer data, it is practically impossible for organizations to make senses of all the changes in customer perception data without using the power of analytics. Analytics gives you insights into how your target market thinks and if there is any change. Hence, being aware of shift in customer behaviour can provide a decisive advantage to companies

DISADVANTAGES

Lack of alignment within teams

There is a lack of alignment between different teams or departments within an organization. However, the insights generated by these teams are either of not much value or are having limited impact on organizational metrics. This could be due to a "silos" way of working with each team only using their existing processes disconnected from other departments. The analytics team should be focused on answering the right questions for the business and the results generated by data analytics teams needs to be properly communicated to the right employees to drive the right set of actions andbehaviours so that it can have a positive impact on the organization.

Lack of commitment and patience

Analytics solutions are not difficult to implement, however, they are costly, and the ROI is not immediate. Especially, if existing data is not available, it may take time to put processes and procedures in place to start collecting the data. By nature, the analytics models improve accuracy over time and require dedication to implement the solution. Since the business users do not see results immediately, they sometimes lose interest which results in loss of trust and the models fail.

Privacy concerns

Sometimes, data collection might breach the privacy of the customers as their information such as purchases, online transactions, and subscriptions are available to companies whose services they are using. Some companies might exchange those datasets with other companies for mutual benefit. Certain data collected can also be used against a person, country, or community. Organizations need to be cautious of what sort of data they are collecting from customers and ensure the security.

11. CONCLUSION

The availability of Data, low-cost commodity hardware, and new information management and analytic software have produced a unique moment in the history of data analysis. The convergence of these trends means that we have the capabilities required to analyze astonishing data sets quickly and cost-effectively for the first time in history. These capabilities are neither theoretical nor trivial. They represent a genuine leap forward and a clear opportunity to realize enormous gains in terms of efficiency, productivity, revenue, and profitability.

Sales analytics is an indispensable tool for businesses all over the globe. It keeps our businessupdated. This is the must-have element, our business won't last long in a highly competitive industry. Provides better insights via Data Visualization. Depending on the company we are managing, finding the right sales analytics software is crucial. With the benefits that sales analytics provides, making the most out of the tool will keep our business running efficiently and maintain superior productivity for years to come.

12. FUTURE SCOPE

The innovations made in our project can be taken to the advanced level in the near future. We have tried few ideas that are lagging in today's dashboard. For example In near future many recommendations as per the customers benefit will definitely take place. More creative and unique ideas will be added to make their own website success when compared to others. Since online shopping is increasing day by day as a boon to customers, these sites must compete with each other for their success. They need to add more stuff to impress the customers. The main thing that they need to concentrate is on customers satisfaction and comfort.

In Future we can identify when a customer purchases the next product and understand how long it took to deliver the product. we get a better insight into the kind of items a customer looks for, product returns, and will be able to predict the sales and profit for the next quarter.

13. APPENDIX

13.1 GITHUB AND PROJECT VIDEO LINK

Github Link:

https://github.com/IBM-EPBL/IBM-Project-27199-1660049686

Project Video Link (Google Drive):

https://drive.google.com/drive/folders/1oWUJRT8xT4M9G17VrC1sqQV_wBU5rQ77