

TEAM ID: PNT2022TMID37533

CUSTOMER CARE REGISTRY

TEAM DETAILS:

Team ID :PNT2022TMID37533

College Name : JEPPIAAR SRR ENGINEERING COLLEGE OF ENGINEERING

Department : COMPUTER SCIENCE & ENGINEERING

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1.INTRODUCTION

INTRODUCTION TO PROJECT

The Customer Service Desk is a web based project.

Customer Service also known as Client Service is the provision of service to customers' Its significance varies by product, industry and domain. In many cases customer services is more important if the information relates to a service as opposed to a Customer.

Customer Service may be provided by a Service Representatives Customer Service is normally an integral part of a company's customer value proposition.

PURPOSE OF THE PROJECT

An online comprehensive Customer Care Solution is to manage customer interaction and complaints with the Service Providers over phone or through and e-mail. The system should have capability to integrate with any Service Provider from any domain or industry like Banking, Telecom Insurance. etc.

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2.LITERATURE SURVEY

Customer Care Registry implementing on Web development based on Cloud Application Development.

ABSTRACT

This Application has been developed to help the customer in processing their complaints. The customers can raise the ticket with a detailed description of the issue. An Agent will be assigned to the Customer to solve the problem. Whenever the agent is assigned to a customer they will be notified with an email alert. Customers can view the status of the ticket till the service is provided.

ADVANTAGES

Improves customer services:

It makes it possible to develop a more personal and close relationship with customers and to offer them a personalized service, that fulfills their expectations, promoting affective ties between the customer and the company.

It promotes more effective marketing strategies:

Through the management and collection of data on customers, it is easier to discover their tastes, needs, expectations, and opinions. This information will help you design personalized strategies, adapted to your customers, which will be far more effective and profitable.

Increases sales volume and revenue:

The design of marketing campaigns tailored to customers translates into higher sales and, as a rule, more revenue.

Promotes more efficient communication within the company:

This solution promotes the creation of more effective communication channels between departments, which allows a better understanding of what is happening in each section involved and the detection and analysis of possible incidents that may arise.

Increases customer loyalty:

Just by meeting customer needs and expectations, we could be able to gain their retention and loyalty.

DISADVANTAGES

The price:

Some customer care registry plans are very expensive, even investing in a custom customer care registry software requires a significant investment but there are many free ones that even though they may not totally fit the needs of your company, we suggest you try them to know exactly which are the features that work best for you to build your own once you have the budget for it.

Training:

With a variety of options available, it is common for some customer care registries to be more complex than others so they require some training in order to get the most out of them. The problem is that getting familiar with these programs requires a considerable amount of time and not everyone is willing to make that commitment.

Use:

If you are not going to use it then don't waste your time and money, just don't buy it. A customer care registry must be useful and for that.

Change:

Not everyone likes change, especially when it comes to their workflow, so by introducing a customer care registry to your company's processes, not everyone will be able to swiftly adapt to the new changes.

EXISTING SYSTEM

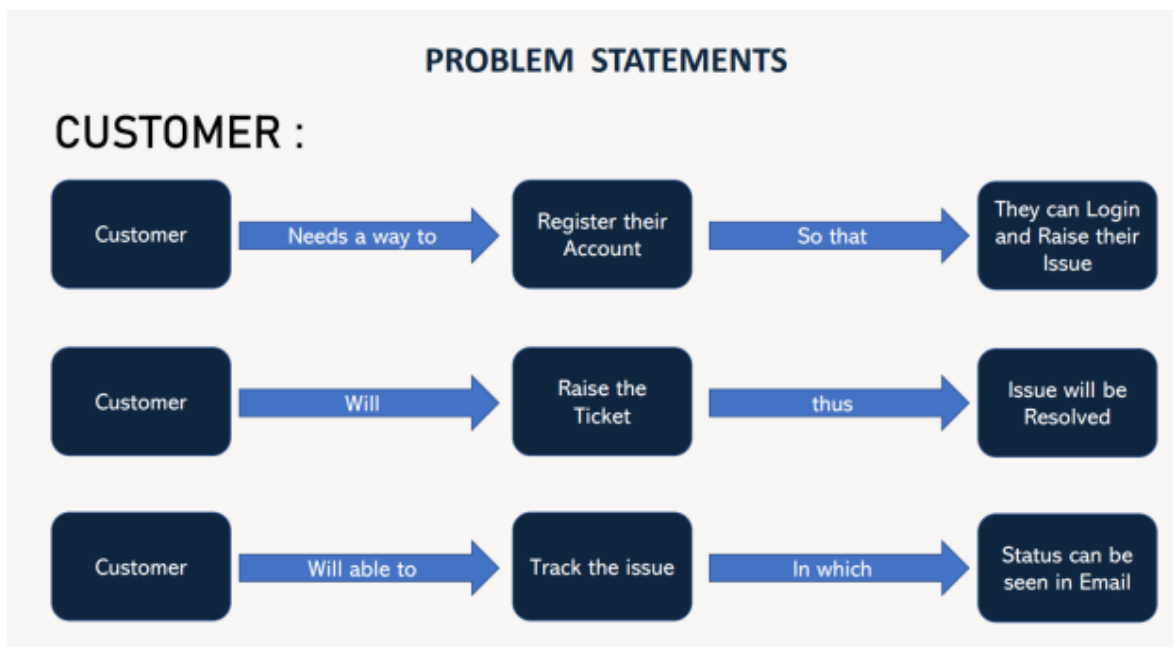
The existing system is a semi-automated at where the information is stored in the form of excel sheets in disk drives. The information sharing to the Volunteers, Group members, etc. is through mailing feature only. The information storage and maintenance is more critical in this system. Tracking the member's activities and progress of the work is a tedious job here. This system cannot provide the information sharing by 24x7 days.

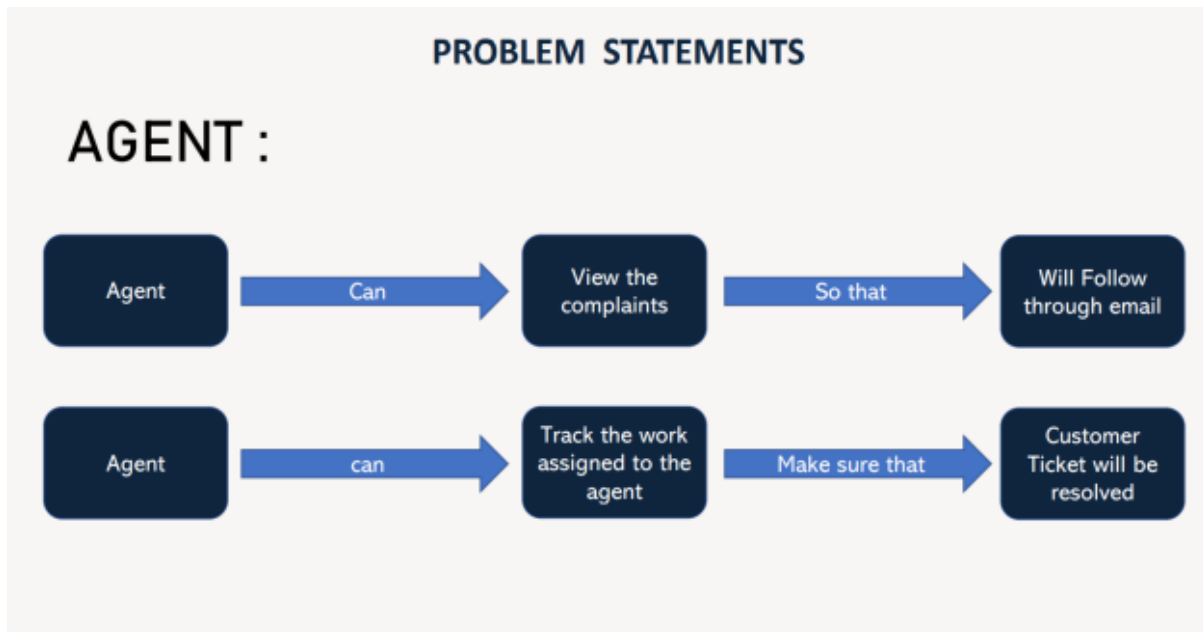
References

1. help desk
2. live chat box support

Problem Statement Definition

A problem statement is a concise description of the problem or issues a project seeks to address. The problem statement identifies the current state, the desired future state and any gaps between the two. A problem statement is an important communication tool that can help ensure everyone working on a project knows what the problem they need to address is and why the project is important.

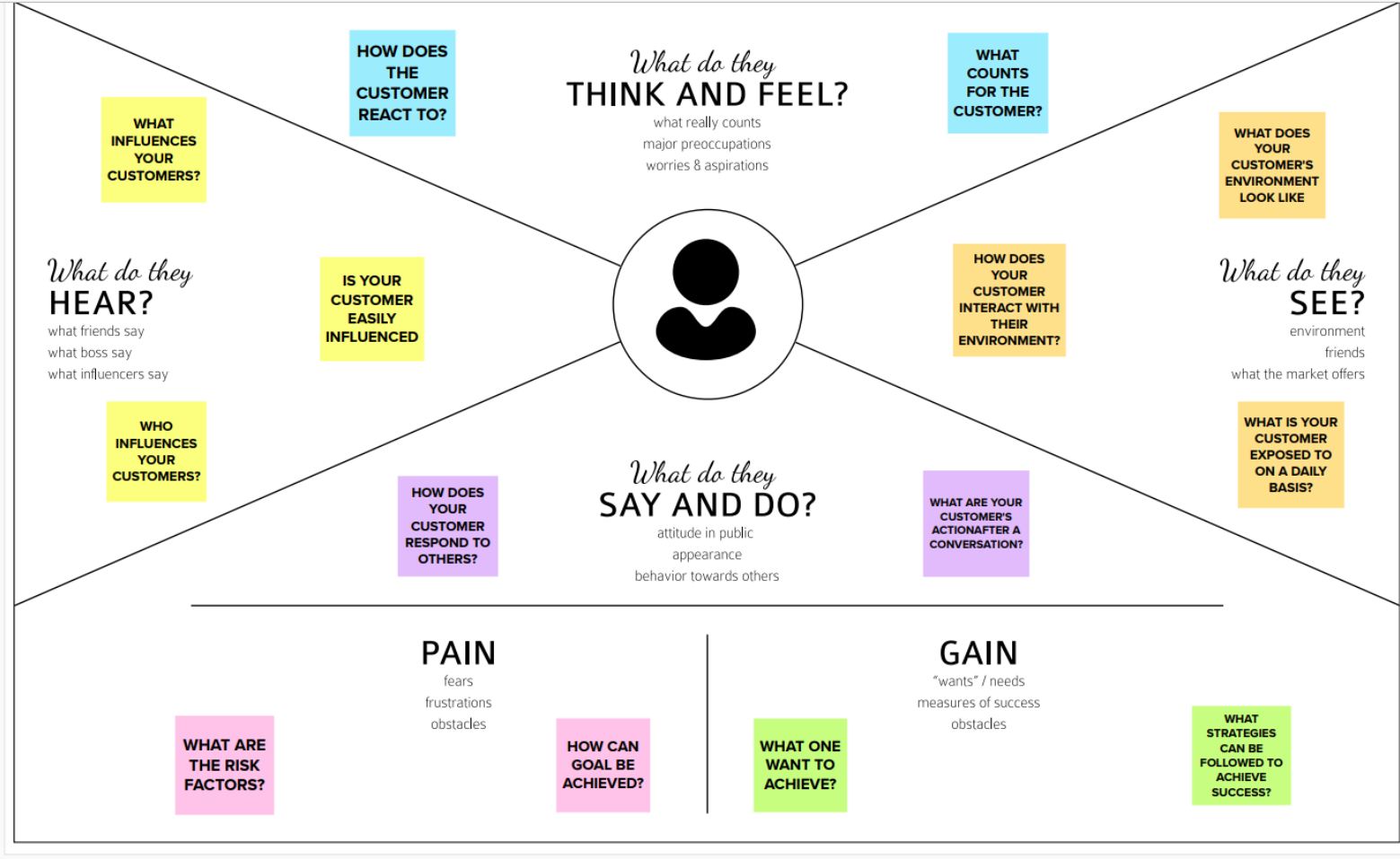




3.IDEATION & PROPOSED SOLUTION

Empathy Map Canvas

An empathy map is **a collaborative tool 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.



In a brainstorming session, participants are encouraged to freely share any ideas that may come to mind. According to the theory, by coming up with a lot of ideas, the brainstorming group is more likely to find a workable solution to the problem they are trying to solve.

With the creation of various brainstorming software tools, such Brightidea and Idea wake, the distinction between ideation and brainstorming has gotten a little bit more hazy. These software applications are made to inspire staff members to come up with fresh suggestions for enhancing business operations and, eventually, bottom-line profitability. The applications frequently mix the ideation and brainstorming processes in that they can be used by individual employees, but businesses can replicate brainstorming sessions by having multiple employees use the software to produce fresh ideas for a particular problem.

Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

45 minutes to prepare
4 hours to collaborate
2-8 people recommended

Before you collaborate
A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

Warm-up
Define why should participants in the session and session rules. Share relevant information or you want ahead.

Set the goal
Focus about the problem you'd be focusing on solving in the brainstorming session.

Learn how to use the facilitation tools
Use the Facilitation suggestions to turn a happy and productive session.

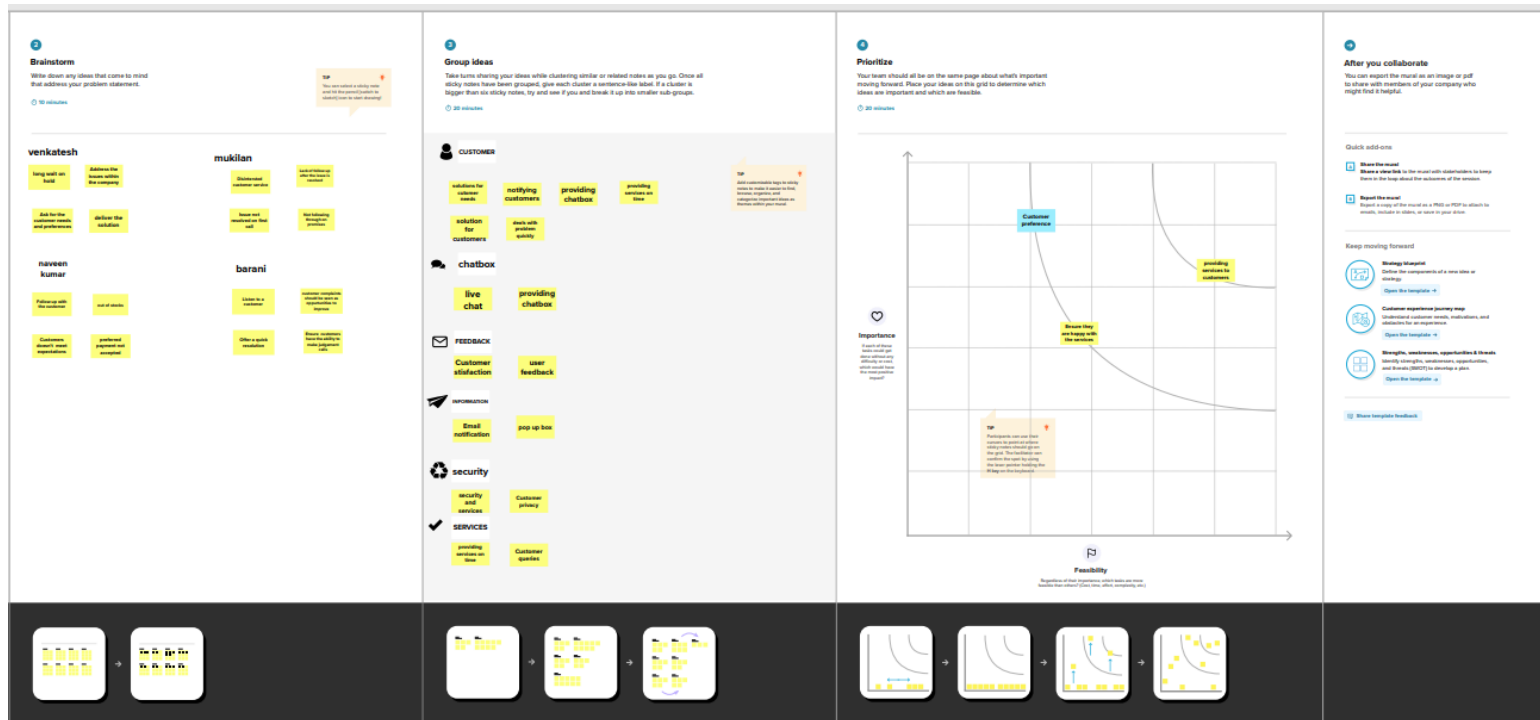
Define your problem statement
What problem are you trying to solve? Frame your problem as a "How Might We" statement. This will be the focus of your brainstorm.

10 minutes

How might we (your problem statement)?

Key rules of brainstorming
Focus on amount and production volume.

- Stay in topic
- Defers judgement
- Use for volume
- Encourage wild ideas
- Listen to others
- If possible, be visual



PROPOSED SOLUTION

Proposed Solution

Customer care Registry

jeppiaar srr college

PNT2022TMID37533

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem or the problem statement to be solved is that <i>to solve user or customer queries</i> with a customer care registry cloud application.
2.	Idea / Solution Description	<p>Users or Customers should be able to log in to their accounts.</p> <p>They should be able to raise tickets for their queries</p> <p>The raised tickets should be able to flag for the status</p>

		<p>The Agent should be able to connect with the customer or the user who raised ticket for better communication.</p> <p>The queries should be used for the future conflictions as a answered ticket.</p>	
3.	User to User (or) Customer to Customer communication	The UI should allow users to share or reply to other users queries, enabling a vast environment of connections and communications.	
4.	ChatBots (or) Assistants	<p>The customer care registry should also consist of chatbot or assistant that can keep track of the users query.</p> <p>It should also be able to label the user queries as answered or not!.</p> <p>The assistant should also be able to answer the users common queries.</p>	

5.	The Flagging of the Queries	The queries or tickets raised by the customers or the users should be able to be flagged for the status reference.	
6.	Additional / Optional services	<p>The additional may include the Mailing service whenever a solution or a reply has been posted for the user raised ticket or query.</p> <p>The status of the query is to be updated by mail to the customer.</p>	
7.	Simplistic UI	The user should be able to easily understand the UI and if not the assistant should guide the newbies about the UI.	

Problem Solution fit

Problem-Solution Fit - this occurs when you have evidence that customers care about certain jobs, pains, and gains. At this stage you've proved the existence of a problem and have designed a value proposition that addresses your customers' jobs, pains and gains. Unfortunately you still do not have clear evidence that your customer really care enough about your value proposition enough to buy it.

Problem-Solution fit canvas 2.0		Purpose / Vision	
Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS Who is your customer? Customers or users who are not able to solve their problems or queries by themselves and reach here out for solutions!	6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices. Customers constraints are the ability of the site to provide solution for their queries! They post their query or raise their ticket regarding their question and the site finds the solution for it.	5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking There are various solutions available for this problem statement. Some of them includes, Chat Bots, Assistants and others etc...
	2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides. 1. To solve the customer or users raised tickets or queries. 2. Flags for the queries or raised tickets. 3. Mailing facility for status updates. 4. Assistants for common queries.	9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations. 1. Lack of knowledge of the particular domain. 2. A new user or an inexperienced user of the domain or tech. 3. Any Internal bug or technical bug in the specific domain.	7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace) The users and customers should follow the code of conduct within the website towards the other users and customers. Any misconduct activities should warn them.
Focus on J&P, tap into C	3. TRIGGERS TR What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news. 1. Triggers to provide better solution.	10. YOUR SOLUTION SL If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour. 1. To provide a simplistic UI for the users and the customers for solving their queries and helping them out. 2. The UI with unique flagging system.	8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 1. They seek for the solution
	4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design. 1. The Feeling of completion of task.		8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. 1. They accidentally find some queries.
Identify strong TR & EM			Extract online & offline CH of BE

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AMALTAMA

4.REQUIREMENT ANALYSIS

What is Requirement Analysis: It is the process of determining user expectations for a system under consideration.

These should be quantifiable and detailed.

Requirement Analysis:

- Serves as a foundation for test plans and project plan
- Serves as an agreement between developer and customer
- Process to make stated and unstated requirements clear
- Process to validate requirement for completeness, ambiguity and feasibility

Functional requirement

Functional requirements specify what a system should be able to do through computations, technical details, data manipulation and processing, and other specialised functions. Use cases, which are used to represent behavioural requirements, explain all the instances in which the system makes use of the functional requirements. Non-functional requirements, commonly referred to as "quality requirements," which place restrictions on the design or execution, support functional requirements (such as performance requirements, security, or reliability). Non-functional requirements often take the form "system shall be," while functional needs are typically articulated in the form "system must do." While non-functional needs are defined in the system architecture, the plan for accomplishing functional requirements is detailed in the system design. Functional requirements, as used in requirements engineering, outline specified outcomes of a system

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

Non-functional requirements

In general, non-functional requirements outline what a system is supposed to be rather than what it should be able to perform. Functional requirements are typically expressed as "system shall do," an individual action or component of the system, maybe explicitly in terms of a mathematical function, or as a black box description of an input, output, process, and control functional model, also known as an IPO Model. Non-functional requirements, on the other hand, have the form of "system shall be," which refers to a general characteristic of the system as a whole or of a particular aspect rather than a specific function. The overall characteristics of the system frequently determine whether a development project is a success or a failure

Non-functional requirements, not related to the system functionality, rather define how the system should perform. Some examples are:

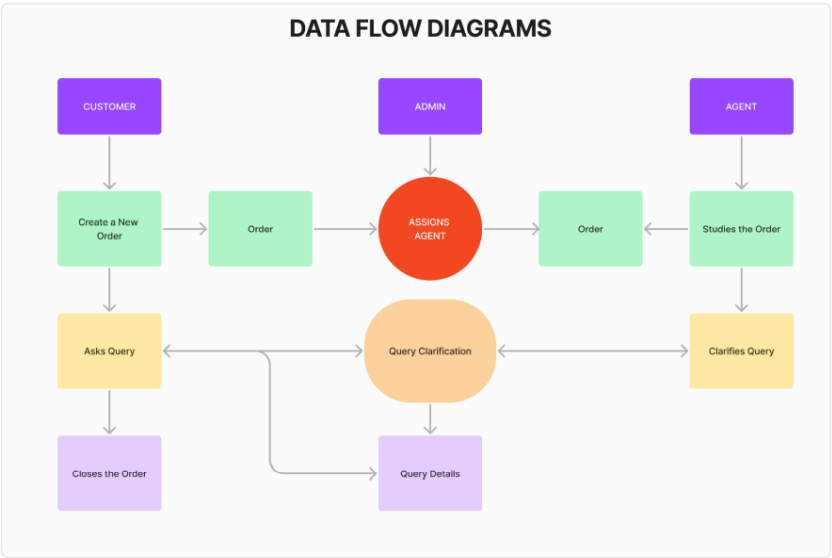
- The website pages should load in 3 seconds with the total number of simultaneous users <5 thousand.
- The system should be able to handle 20 million users without performance deterioration.
- Here's a brief comparison and then we'll proceed to a more in-depth explanation of each group

5.PROJECT DESIGN

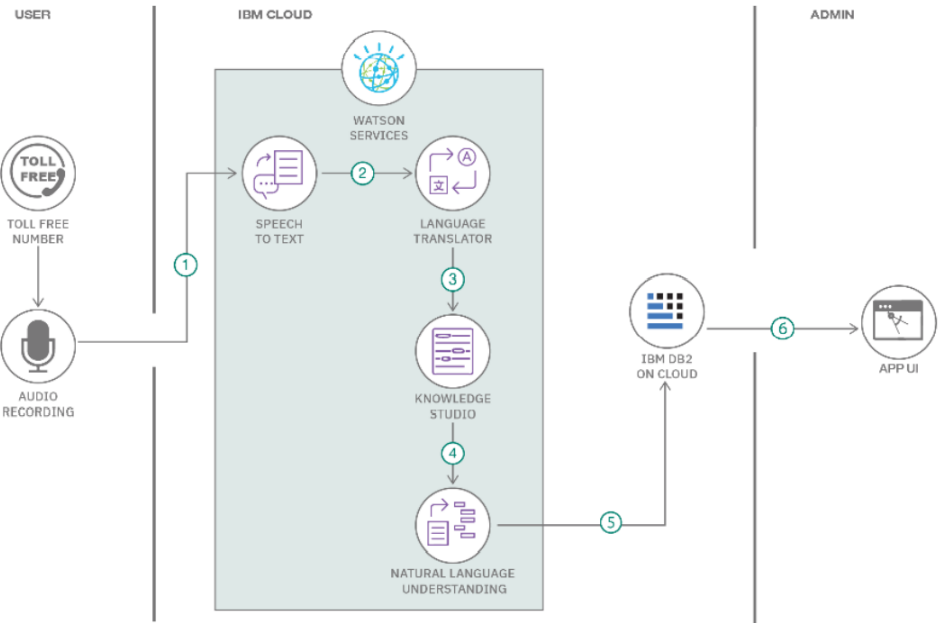
Data Flow Diagrams

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



Solution & Technical Architecture



TECHNOLOGY ARCHITECTURE

S.NO	COMPONENT	DESCRIPTION	TECHNOLOGY
1	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc...
2	Application Logic-1	Logic for a process in the application	Python
3	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5	Database	Data Type, Configurations etc.	MySQL etc
6	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc...
7	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration	Local, Cloud Foundry, Kubernetes, etc...

APPLICATION CHARATERISTICS

S.NO	COMPONENT	DESCRIPTION	TECHNOLOGY
1	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc...
2	Application Logic-1	Logic for a process in the application	Python
3	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5	Database	Data Type, Configurations etc.	MySQL etc
6	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc...
7	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration	Local, Cloud Foundry, Kubernetes, etc...

USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a customer, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
	login	USN-2	As a customer, I can login to the application by entering correct email and password.	I can access my account/dashboard.	High	Sprint-1
	Dashboard	USN-3	As a customer, I can see all the orders raised by me.	I get all the info needed in my dashboard.	Low	Sprint-2
	Order creation	USN-4	As a customer, I can place my order with the detailed description of my query	I can ask my query	Medium	Sprint-2
	Address Column	USN-5	As a customer, I can have conversations with the assigned agent and get my queries clarified	My queries are clarified.	High	Sprint-3
	Forgot password	USN-6	As a customer, I can reset my password by this option incase I forgot my old password.	I get access to my account again	Medium	Sprint-4
Agent (web user)	Order details	USN-7	As a Customer, I can see the current stats of order.	I get abetter understanding	Medium	Sprint-4
	Login	USN-1	As an agent I can login to the application by entering Correct email and password.	I can access my account / dashboard.	High	Sprint-3
	Dashboard	USN-2	As an agent, I can see the order details assigned to me by admin.	I can see the tickets to which I could answer.	High	Sprint-3
	Address column	USN-3	As an agent, I get to have conversations with the customer and clear his/her doubts	I can clarify the issues.	High	Sprint-3
	Forgot password	USN-4	As an agent I can reset my password by this option in case I forgot my old password.	I get access to my account again.	Medium	Sprint-4

6. PROJECT PLANNING & SCHEDULING

‘Project Planning and Scheduling’, though separate, are two sides of the same coin in project management. Fundamentally, ‘Project planning’ is all about choosing and designing effective policies and methodologies to attain project objectives.

While ‘Project scheduling’ is a procedure of assigning tasks to get them completed by allocating appropriate resources within an estimated budget and time-frame.

The basis of project planning is the entire project. Unlikely, project scheduling focuses only on the project-related tasks, the project start/end dates and project dependencies.

Thus, a ‘project plan’ is a comprehensive document that contains the project aims, scope, costing, risks, and schedule. And a project schedule includes the estimated dates and sequential project tasks to be executed.

Project Planning

- Developing a project to make it ready for investment
- Determines the jobs/tasks required to attain project objectives

Sprint Planning & Estimation

- Sprint planning is an event in scrum that kicks off the sprint.
- The purpose of sprint planning is to 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 off the 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.

Sprint 1

- ✓ HOMEPAGE
- ✓ LOGIN PAGE(CUSTOMER)
- ✓ ADMIN PAGE(CUSTOMER_LIST)
- ✓ AGENT LOGIN PAGE

Sprint 2

- ✓ HOMEPAGE
- ✓ AGENT HOMEPAGE
- ✓ CUSTOMER HOMEPAGE
- ✓ ADMIN
- ✓ WEB CHAT

Sprint 3

- ✓ HOMEPAGE
- ✓ CUSTOMER COMPLAINT_PAGE
- ✓ CUSTOMER HOMEPAGE
- ✓ ADMIN PAGE(COMPLAINT_LIST)
- ✓ AGENT ALLOTMENT

Sprint 4

- ✓ *TESTING THE USER AND ADMIN LOGIN PAGE*
- ✓ *TESTING THE SIGN IN AND SIGN UP*
- ✓ *TESTING THE ALL PAGE*

7.CODING & SOLUTIONING

College graduates with prior programming expertise or technical degrees are recruited and transitioned into professional positions with Alabama firms and organisations through the highly competitive CodingSolutions job accelerator and talent refinement programme at no cost to the graduates. We provide a pool of varied, well-trained, techs-savvy individuals that wants to launch and advance their career in Alabama.

The mission of veteran- and woman-owned CodingSolutions is to mobilise the next generation of IT talent and provide them the tools and resources they require to make your business successful. Innovative talent is necessary for innovative technologies.

We wish to provide CodingSolutions prospects to assist you expand your Alabama team.

Our applicants are swiftly hired at the top of the list by growing businesses for lucrative, long-term positions.

Features:

7 main types of customer needs:

- Friendliness
- Empathy
- Fairness
- Control
- Alternatives
- Information
- Time

1. Friendliness

This is the most basic customer need that's associated with things like courtesy and politeness. Friendly agents are a top indicator of a good customer experience, according to the customers surveyed in our 2021 Trends Report

2. Empathy

Customers need to know the organization understands and appreciates their needs and circumstances. In fact, 49% surveyed in our 2021 Trends Report said they want agents to be empathetic.

3. Fairness

Customers must feel that they're getting adequate attention and fair and reasonable answers.

4. Control

Customers want to feel like they have an influence on the outcome. You can empower your customers by listening to their feedback and using it to improve.

5. Alternatives

Customers want choice and flexibility from customer service; they want to know there is a range of options available to satisfy them. In fact, high-performing companies are more likely to provide customers with a choice of customer service channels. 50% of high performers

have adopted an omnichannel support strategy, compared to 18% of their lower-performing peers

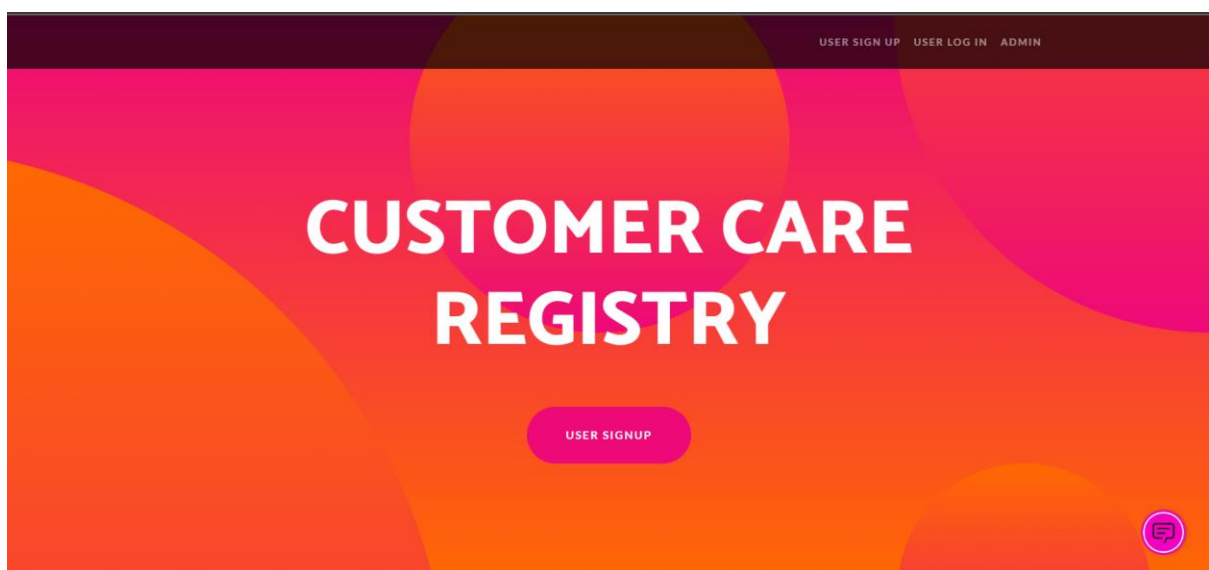
6. Information

Customers want to know about products and services in a pertinent and time-sensitive manner; too much information and selling can be off-putting for them. A knowledge base is a great way to provide existing customers with the information they need, when they need it. And highperforming CX teams are more likely to offer a knowledge base, according to our research.

7. Time

Customers' time is valuable, and organizations need to treat it as such. 73% of customers said resolving their issues quickly is the top component of a good customer experience. To deliver on that expectation, CX teams need customer service software that arms them with tools to respond to customers quickly and effectively.

8.RESULTS



9.ADVANTAGES & DISADVANTAGES

ADVANTAGES :

1.Customer loyalty

Loyal customers have many benefits for businesses. 91% of customers say a positive customer service experience makes them more likely to make a further purchase (source: Salesforce Research). Also, investing in new customers is five times more expensive than retaining existing ones (source: Invesp). Creating loyal customers through good customer service can therefore provide businesses with lucrative long-term relationships.

2. Increase profits

These long-term customer relationships established through customer service can help businesses become more profitable. Businesses can grow revenues between 4% and 8% above their market when they prioritise better customer service experiences (source: Bain & Company). Creating a better customer service experience than those offered by competitors can help businesses to stand out in their market place, and in turn make more sales.

3. Customer recommendations

Providing good customer service can create satisfied customers, who are then more likely to recommend the business to others. 94% of customers will recommend a company whose service they rate as “very good” (source: Qualtrics XM Institute). This is useful, as 90% of customers are influenced by positive reviews when buying a product (source: Zendesk). Customers recommending a company through word of mouth or online reviews can improve the credibility of the business.

4. Increase conversion

Good customer service can help businesses turn leads into sales. 78% of customers say they have backed out of a purchase due to a poor customer experience (source: Glance). It is therefore safe to assume that providing good customer service will help to increase customer confidence and in turn increase conversion.

5. Improve public image

Customer service can help businesses to improve the public perception of the brand, which can then provide protection if there is a slip up. 78% of customers will forgive a company for a mistake after receiving excellent service (source: Salesforce Research). Meanwhile, almost 90% of customers report trusting a company whose service they rate as “very good.” On the other hand, only 16% of those who give a “very poor” rating trust companies to the same degree (source: Qualtrics XM Institute). Creating positive customer experiences is vital in gaining customer trust and creating a strong public image.

Disadvantage :

The Consumer Protection Act in India has numerous restrictions and drawbacks, which are listed in this article.

Only services for which a particular payment has been made are covered under the consumer protection act. However, it does not protect medical professionals, or hospitals, and covers cases when this act does not apply to free medical care.

This act does not apply to mandatory services, such as water supply, that are provided by state agencies.

Only two clauses related to the supply of hazardous materials are covered by this act. Consumer redress is not given any power by the consumer protection act.

The consumer protection act focuses on the supply of ineffective products, but there are no strict regulations for those who produce it.

10.CONCLUSION

It is a web-enabled project.

- With this project the details about the product will be given to the customers in detail with in a short span of time.
- Queries regarding the product or the services will also be clarified.
- It provides more knowledge about the various technologies.

11.APPENDIX

Github id: IBM-EPBL/IBM-Project-1123-1658375838

