ASSIGNMENT COVERSHEET

UTS: ENGINEERING & INFORMATION TECHNOLOGY

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ASSESSMENT ITEM NUMBER & TITLE

Assignment 1 - Project

☒ I confirm that I have read, understood and followed the guidelines for assignment submission and presentation on page 2 of this cover sheet.
☒ I confirm that I have read, understood and followed the advice in the Subject Outline about assessment requirements.
☒ I understand that if this assignment is submitted after the due date it may incur a penalty for lateness unless I have previously had an extension of time approved and have attached the written confirmation of this extension.

Declaration of originality: The work contained in this assignment, other than that specifically attributed to another source, is that of the author(s) and has not been previously submitted for assessment. I understand that, should this declaration be found to be false, disciplinary action could be taken and penalties imposed in accordance with University policy and rules. In the statement below, I have indicated the extent to which I have collaborated with others, whom I have named.

Statement of collaboration:

Signature of student(s) _____ **Date** 02/06/2020

Link to Presentation (Hosted On YouTube): https://www.youtube.com/watch?v=pu5gpxbJ-8U

01 - Project Objectives

The main objective of this project is to develop an information system which will streamline the existing call management system within the travel company's in-house call management centre (CMC).

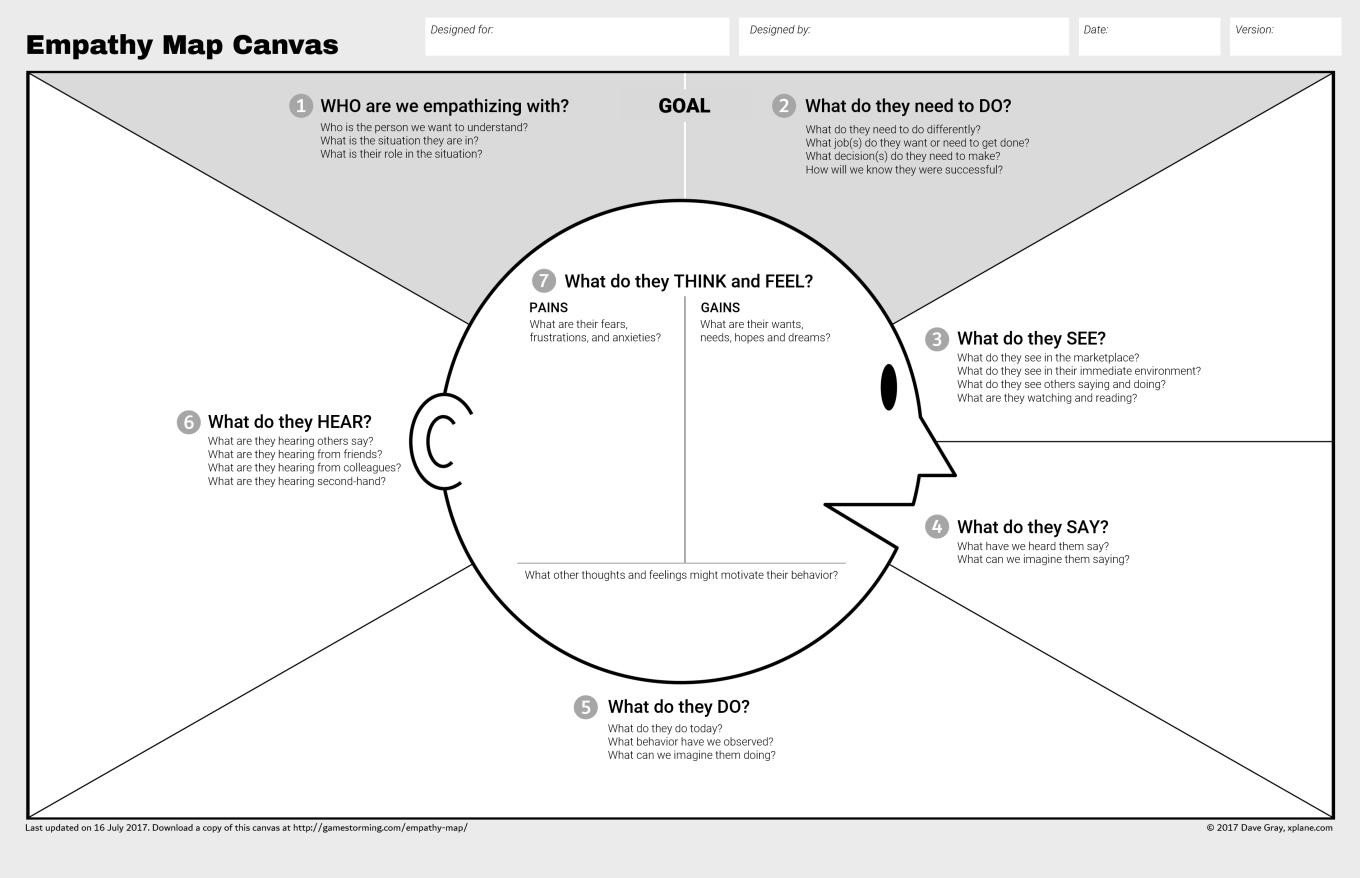
Currently, the CMC faces issues with call routing and flow control for their inbound and outbound calls. To resolve this issue, this project intends to utilise a 'Profiler Tool' to match customers with CMC 'Relationship Managers' (RMs). By integrating this tool as a 'skill matcher' within the proposed system, customers will be readily matched with a RM who can satisfy their unique needs/interests.

Additionally, this new system will assist RMs to more effectively tailor the sales process for each customer and improve their sales performance.

02 - Stakeholders

In the major travel company, there are multiple stakeholders who either participate, or have an interest in the activities of the business. These are:

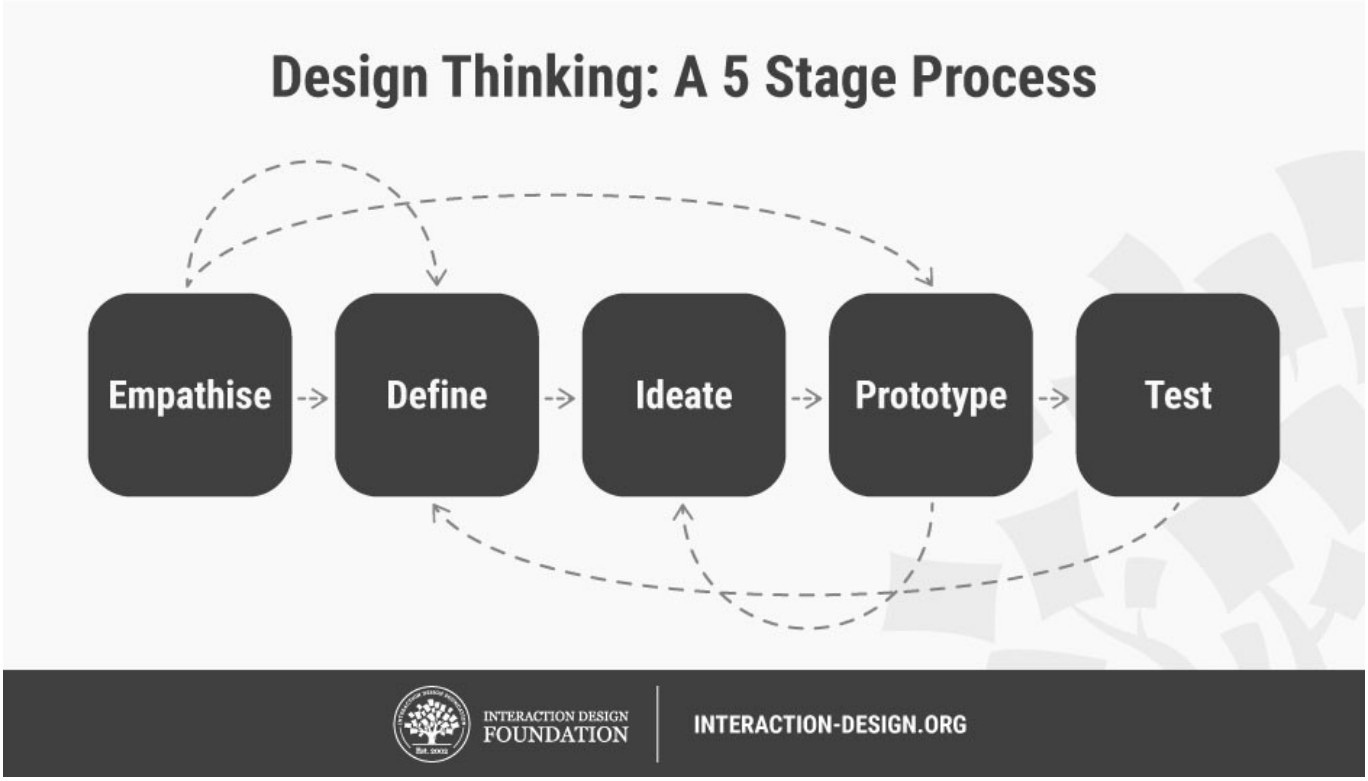
- Customer
- Relationship Manager (RM)
- Project Developer
- Profiler Tool
- Target List (Potential Customers)
- Call Distributor (Call Management Centre)



Empathy Map

An empathy map is a design tool that assists in better understanding the motivations of each stakeholder. Through understanding the specific activities and mindset of a stakeholder, we can develop a greater sense of empathy with the stakeholder. The ultimate goal in the creation of an empathy map is to best develop a sense of how a stakeholder will react to change in the business, and as such, conduct business in a manner that aligns with the requirements of as many stakeholders as possible.

03 - Design Thinking



Design Thinking is a recursive process, wherein businesses attempt to gain a greater sense of empathy with the user. The essence of design-thinking is the recognition and utilization of the customer-centric nature of business. In the understanding, and analysis of the requirements of the business, the team employed design thinking in order to best utilise the customers of the business.

Being a customer service oriented business, we felt it necessary to adopt a design-thinking oriented approach. In adopting this approach, the 5 stages of the design-thinking were immensely important to the completion of the project. In naming these 5 stages, the way in which the stage was undertaken with specific reference to this project will be stated.

In order, the 5 stages are:

1. Empathise

In undergoing the first stage of the design-thinking process, the first stage is empathising with the customer. In doing this, there is no more effective way to gain empathy then through the creation of an empathy map.

The empathy map takes an extremely literal approach to 'putting yourself in the customer's shoes'. The empathy map considers the senses of the customer in it's approach, so as to allow for an accurate emulation of the customer as a person, not just as an entity that acts alongside the businesses. This encapsulates an important foundation of design-thinking, to truly understand the customer as a living, breathing person, not just as an entity.

Below is our empathy map for the customer:

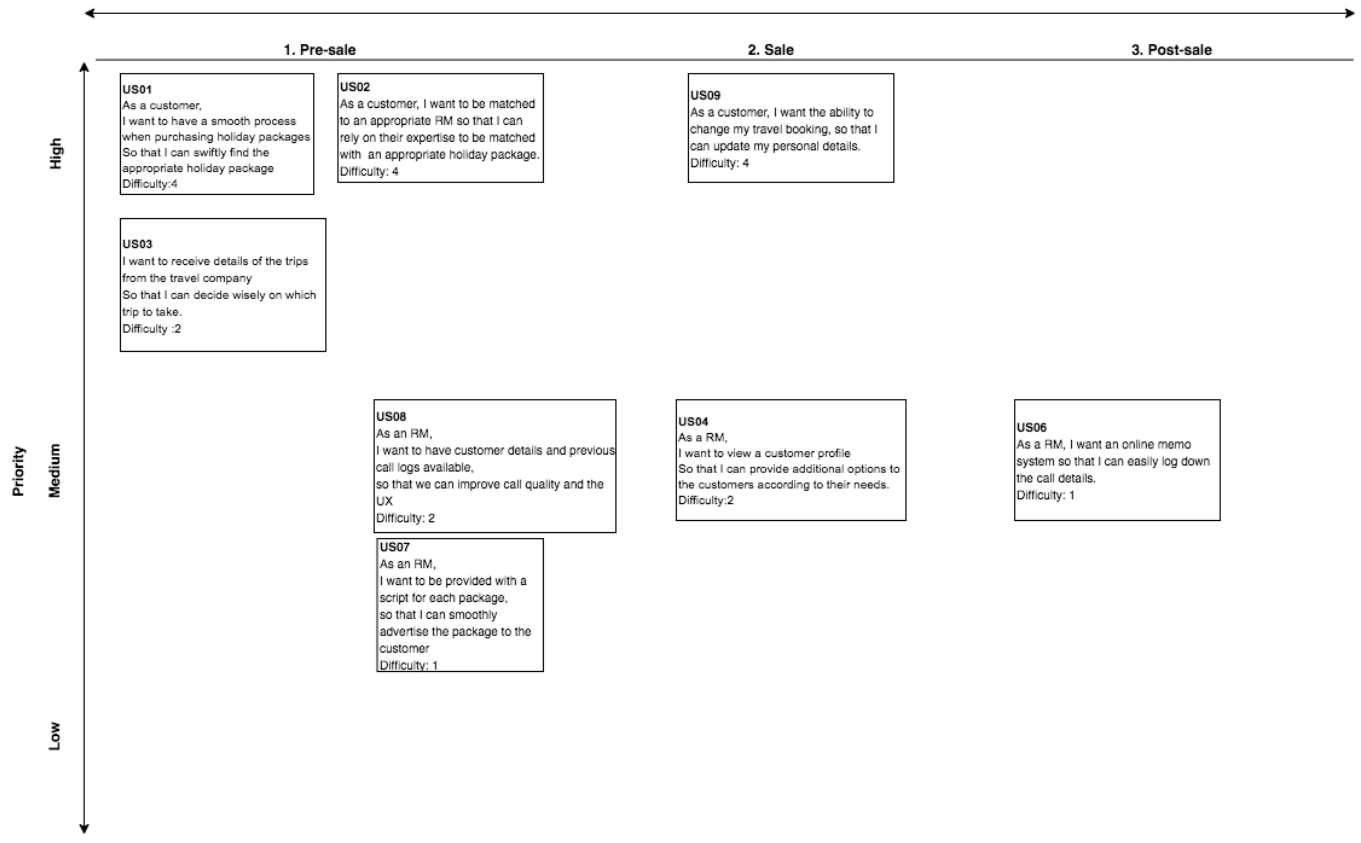
Customer

1. Customers are current users and potential buyers. Customers wish to have an expeditious process when they purchase holiday packages.
2. Customers hope to be matched with an appropriate RM, so that they can purchase an appropriate holiday package. Customers decide their price range or budget, accommodation, destination, itinerary. Customers know they are successful when they have purchased a holiday package
3. Customers will see advertisements or brochures. Customers will see confirmation from the travel company of the details of their trip. Customers do not see the backend of the process. They are also seeing reviews of various holiday packages
4. Customer dialogue consists of requests, questions and confirmation.
5. Customers browse brochures and advertisements, as well as conduct personal research and purchase holiday packages.
6. Customers hear referrals and recommendations from their friends/colleagues. They also hear a personal, tailored recommendation from RMs
7. Pains: General travel anxieties, lengthy buying process, out-of-budget prices and being recommended an inadequate holiday package.
8. Gains: Quick buying process, more-than-adequate holiday, affordable prices
9. Motivations: Going on a holiday, getting a perceived cheap deal

2. Define

In the definition stage of design-thinking, the goal is to define any identified problems from the empathy map, and rephrase them into solutions. This process actualises a core foundational belief of design-thinking, re-framing problems in a humanistic way, so as to realign our perspective of these problems from a standard business problem, into a human-centric one. This was accomplished through the use of POV statements. The template of a POV statement is as follows. How might we [intended action], for [user], so that [desired effect]. Our user story map, POV Statements and use cases are:

User Story Map



POV Statements

User Story ID	Intended Action	Primary User	Desired Effect
US##	[How might we]	[for]	[so that]
US01	How might we adjust the sales process of holiday packages,	for customers,	so that purchasing experience is expedited.
US02	How might we refine the matching process,	for RMs,	so that the chances of a sale are higher.
US03	How might we alter our offer-notification system,	for customers/ potential customers,	so they can be regularly notified of our current offers.
US04	How might we display a customer's profile,	for RMs,	so RMs can better tailor the customer's experience.
US05	How might we best find a suitable RM,	for customers,	so that customers can have the best sales experience.
US06	How might we implement a memo system,	for RMs,	so that a detailed call log can be kept.
US07	How might we create a script,	for RMs,	so they can eloquently advertise/sell their packages to customers.
US08	How might we store previous call logs and customer details,	for RMs,	so that the user experience is enhanced.
US09	How might we facilitate the modification of existing bookings,	for customers,	so that personal information can be altered if necessary.
US10	How might we display our brochures,	for customers,	so that they can view current, available offers.

Use Cases

Use Cases

UC001: Employee profile As a RM, I want to generate a valid employee profile so that I can be matched with an appropriate customer based on my skills.

UC002: Customer profile. As a customer, I want to register my personal details through an online portal so that I can create a customer profile which is ready to be matched with a relationship manager.

UC003: Inbound calls. As a customer, I want to be matched with a suitable RM so that I can rely on their expertise to obtain a suitable holiday package.

UC004: Outbound calls As a RM, I want to be matched with an appropriate customer so that I can easily fulfil their needs and achieve a sale.

UC005: Call logs As a RM, I want a database to store call logs, so that I can recall past conversations with customers.

UC006: Email system As a RM, I want an email system to support post-sale management, so that I can easily send travel package details.

3. Ideate

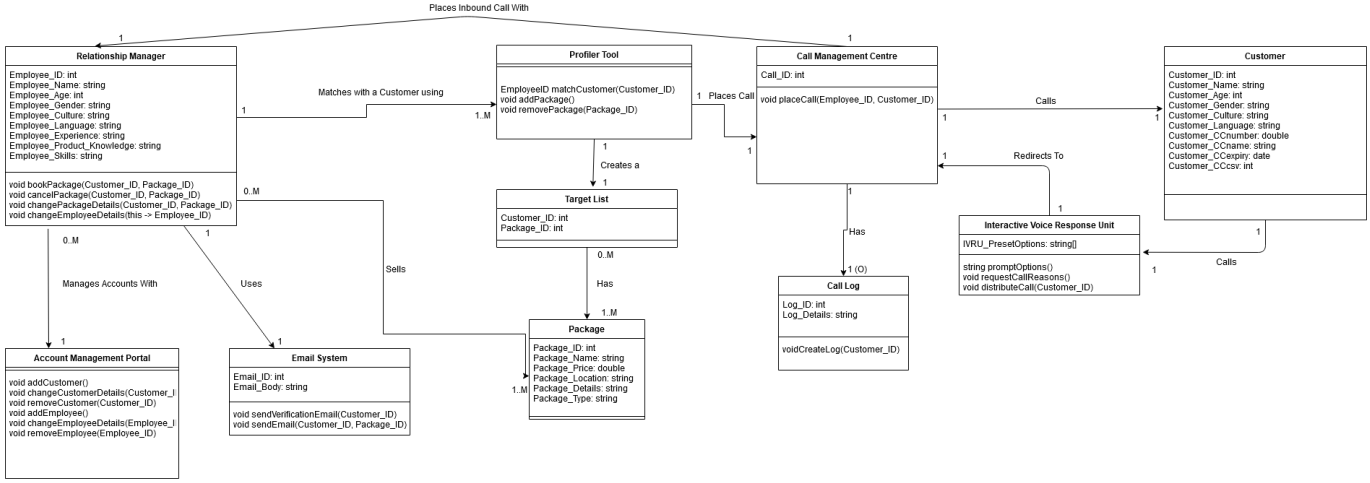
The ideation phase is essential in the design-thinking process. This phase is where ideas are generated for the problem. This phase of the process is the most abstract, wherein numerous different approaches can be undertaken. Although this phase wasn't undergone in this project, methods of ideation include:

- Brainstorming
- Worst Possible Idea
- The SCAMPER method (An acronym for 7 different thought provocations)

4. Prototype

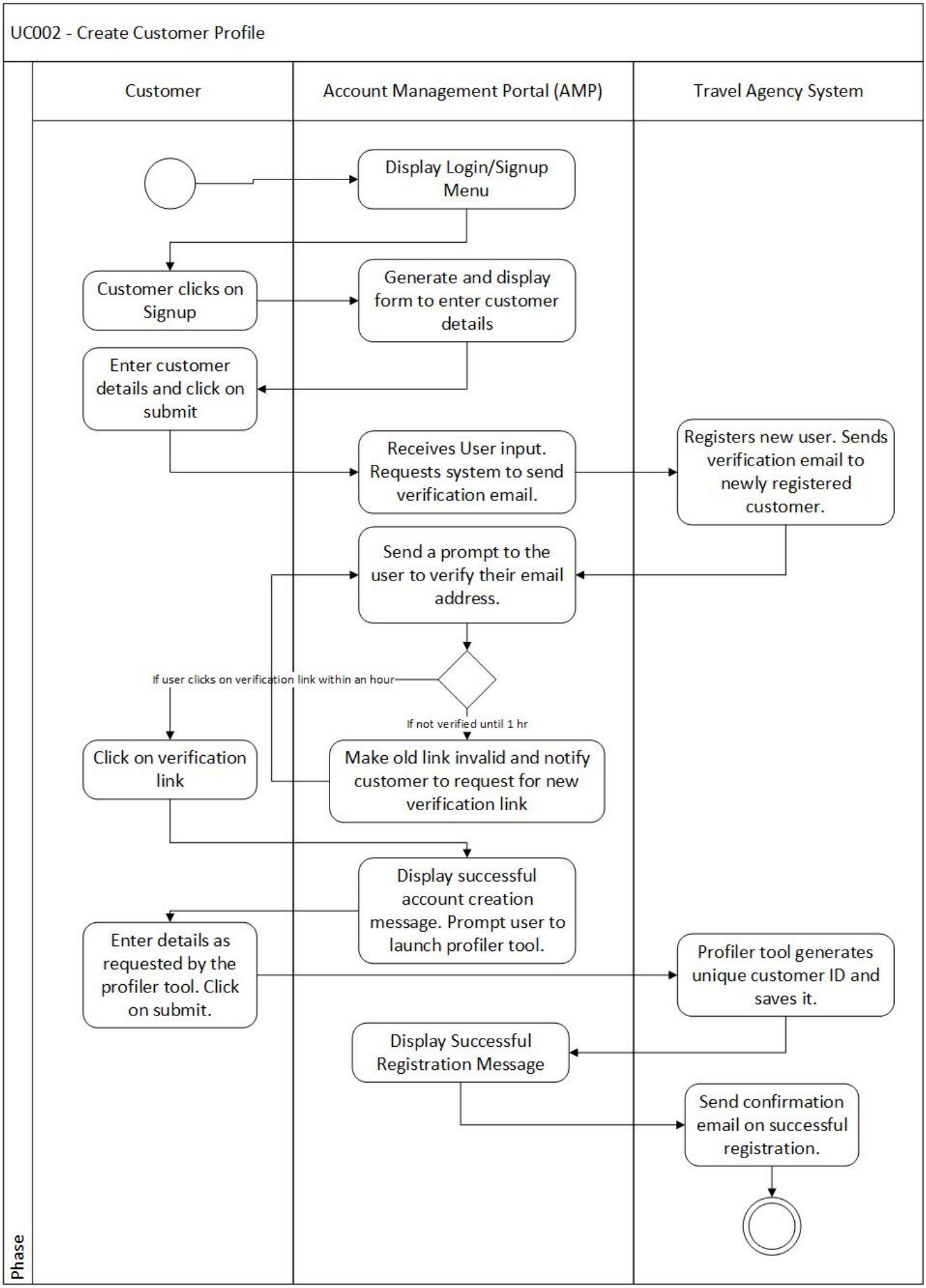
Prototyping is the creation of inexpensive, scaled down versions of the product. These prototypes are then accepted, improved upon or rejected based on user experiences. During this phase, constraints about the product become more apparent, and problems begin to be abstracted. The prototype phase acts as as somewhat of an extension to the empathy stage, wherein a greater sense of empathy toward the user is generated. A prototype allows us to understand how real users would behave, think, and feel when interacting with the end product. In this project, prototypes were represented as work products. Through the creation of various diagrams, a greater sense of understanding of user issues was developed. Additionally, the scope and intricacies of the system were elaborated upon, highlighting previously unknown aspects of the system. This includes a Class Diagram, Activity Diagram, Collaborative Diagrams and multiple Use Case Diagrams.

Class Diagram

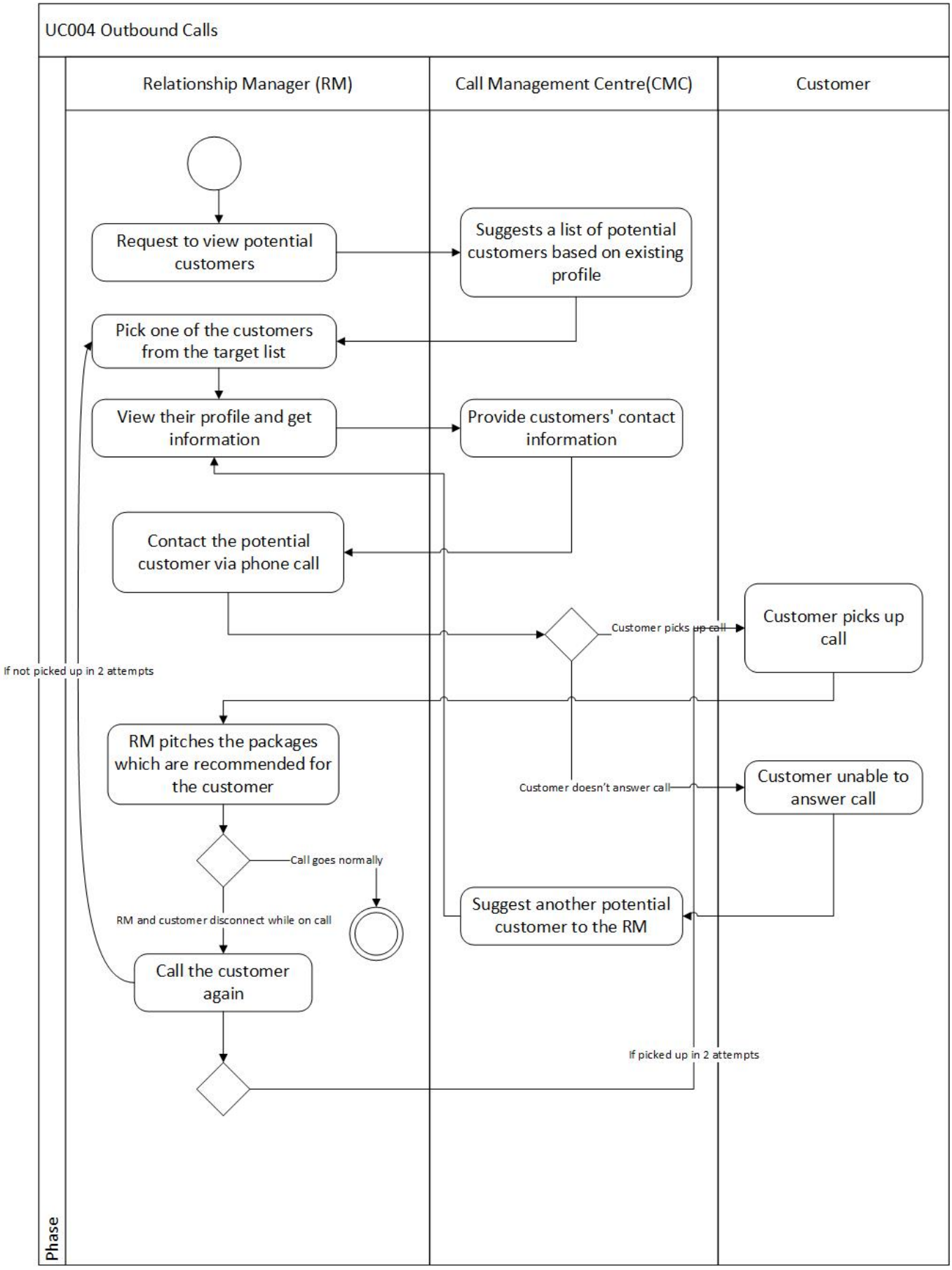


Activity Diagram

Create Customer Profile

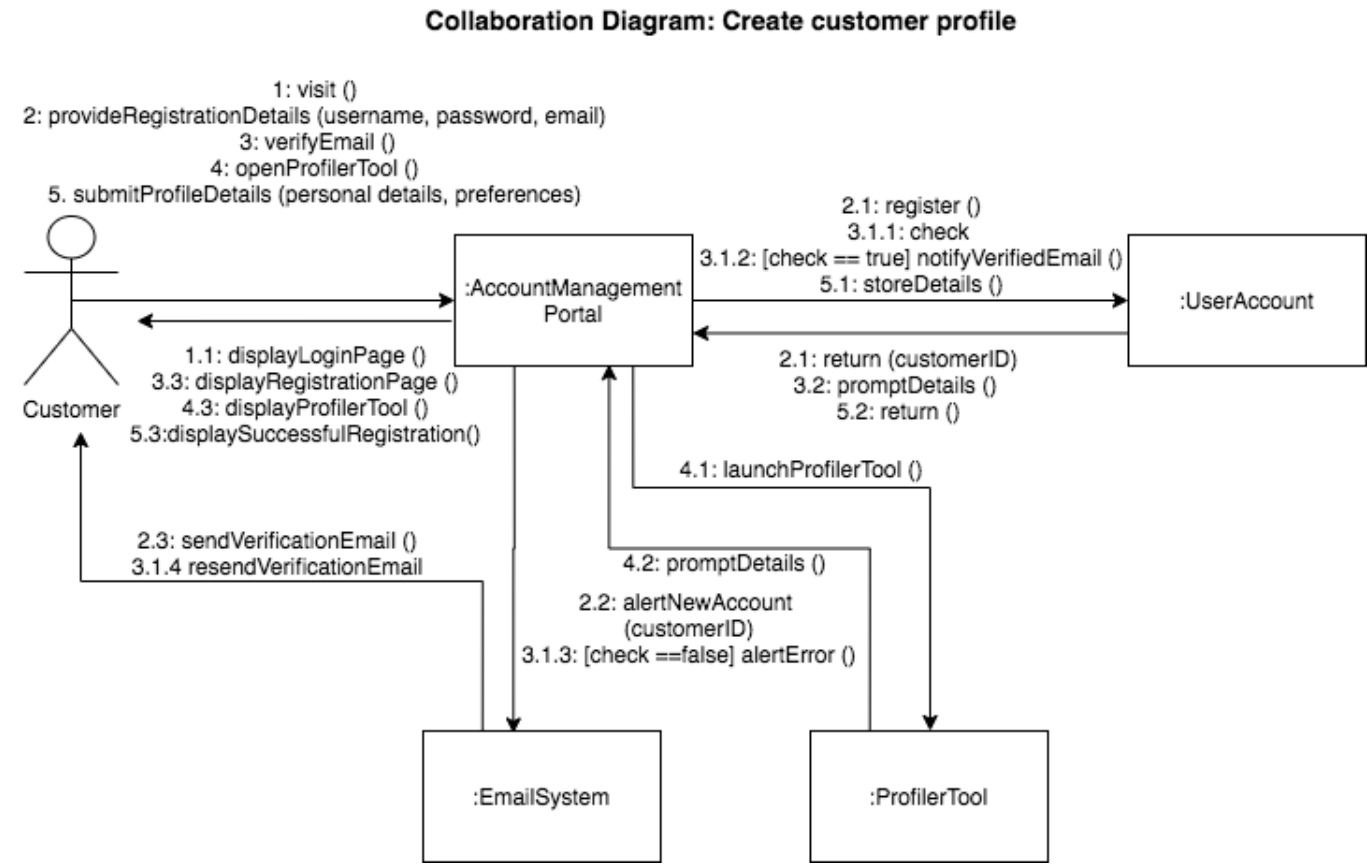


Outbound Calls

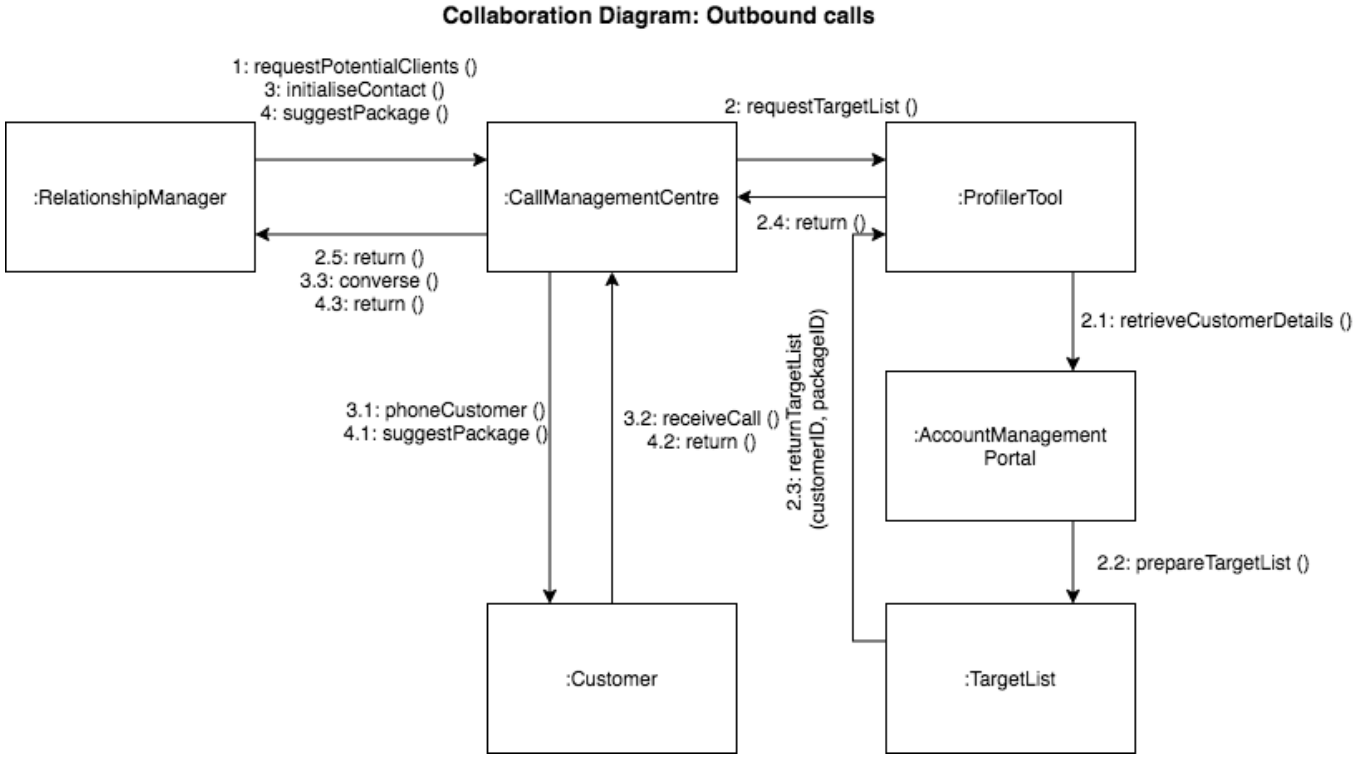


Collaboration Diagrams

Create Customer Profile

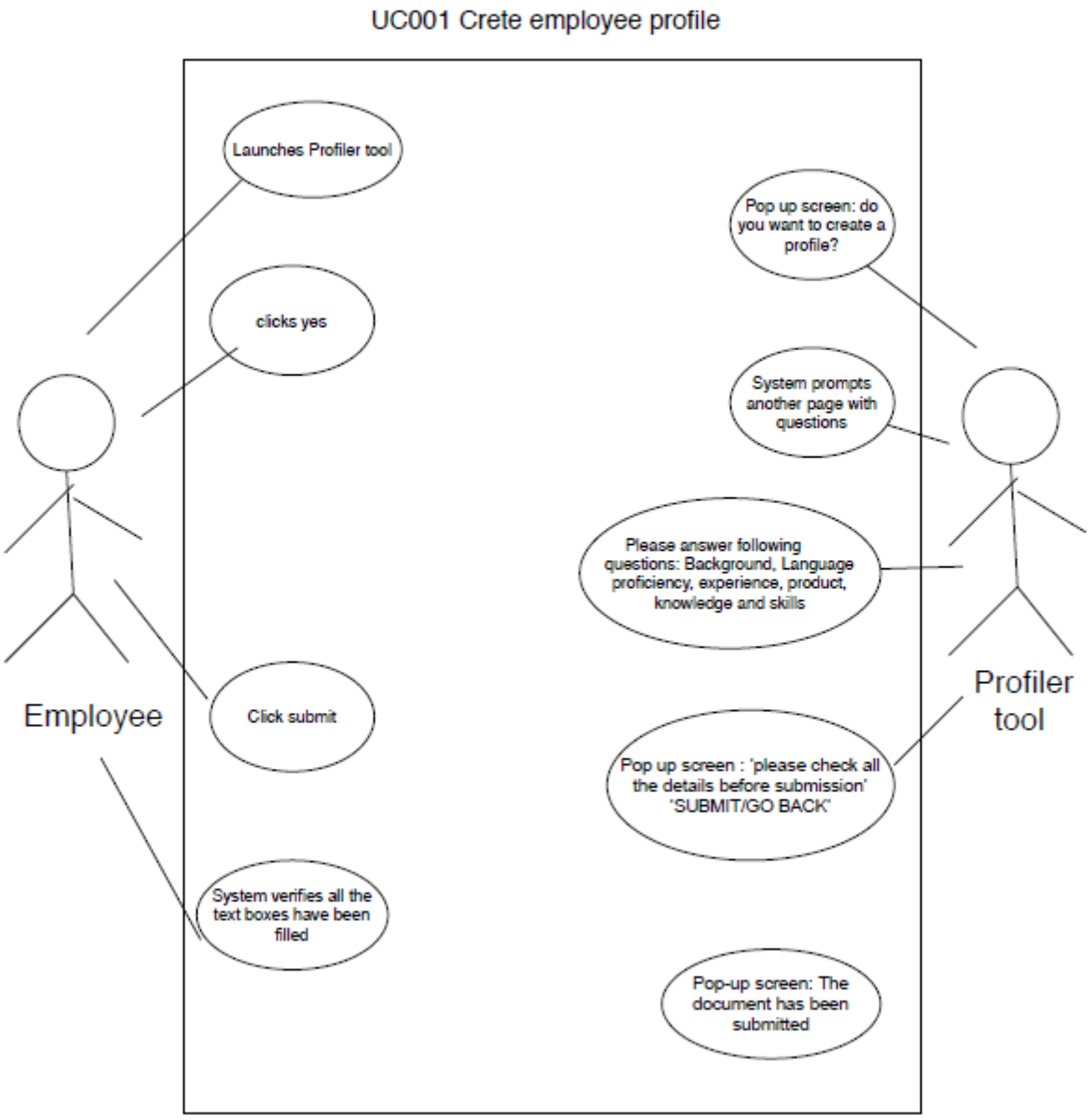


Outbound Calls

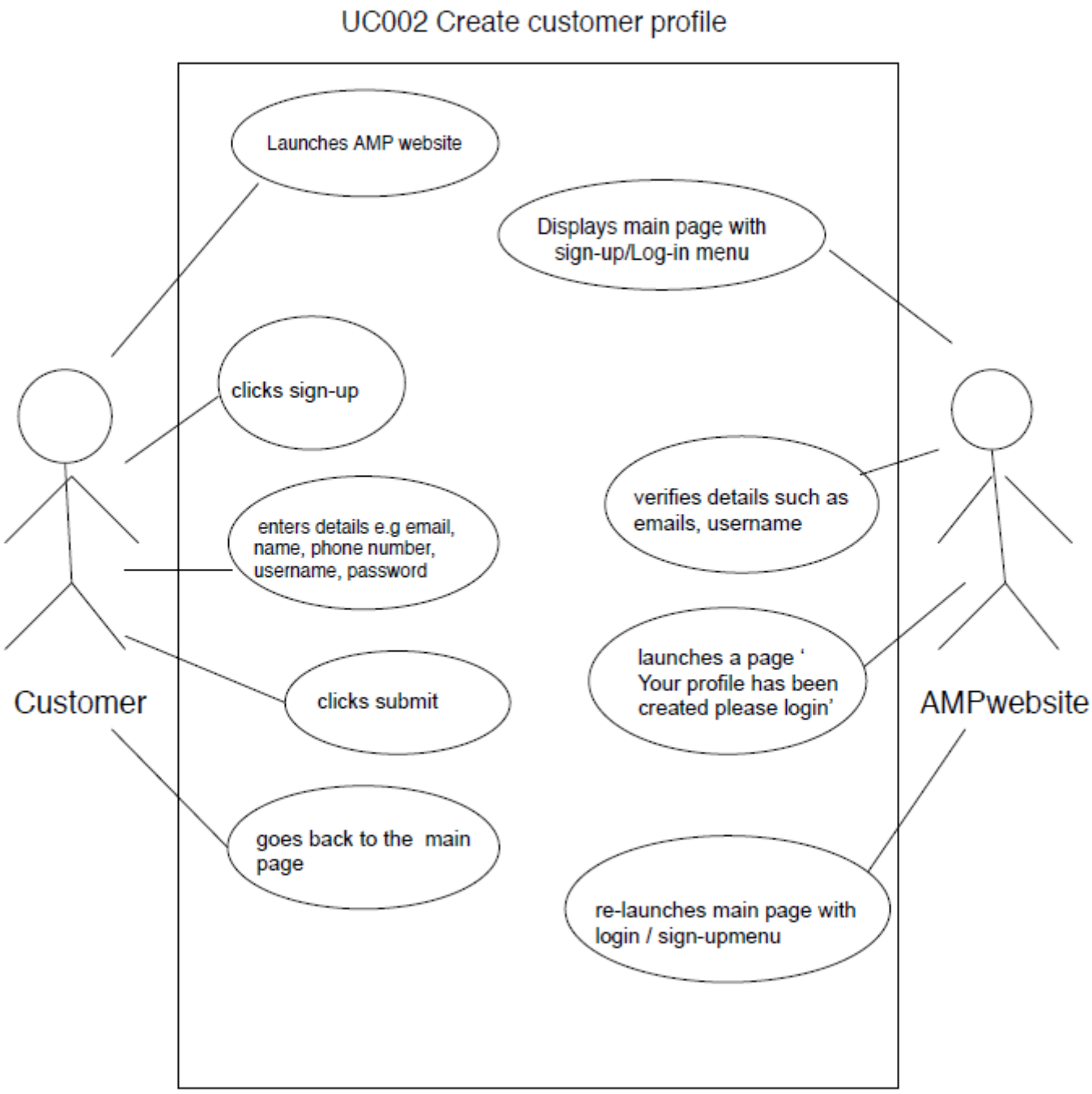


Use Case Diagrams

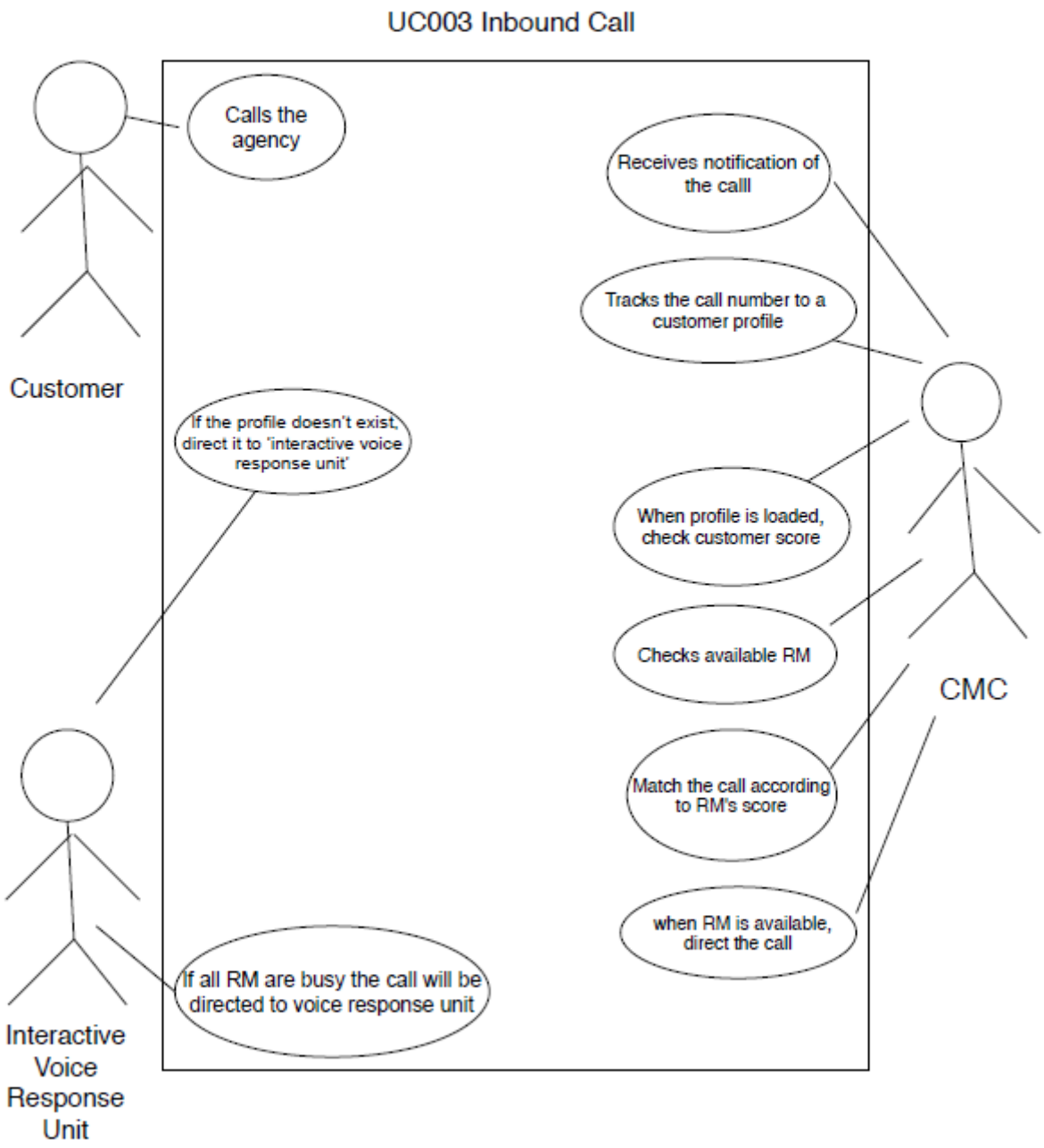
Create Employee Profile



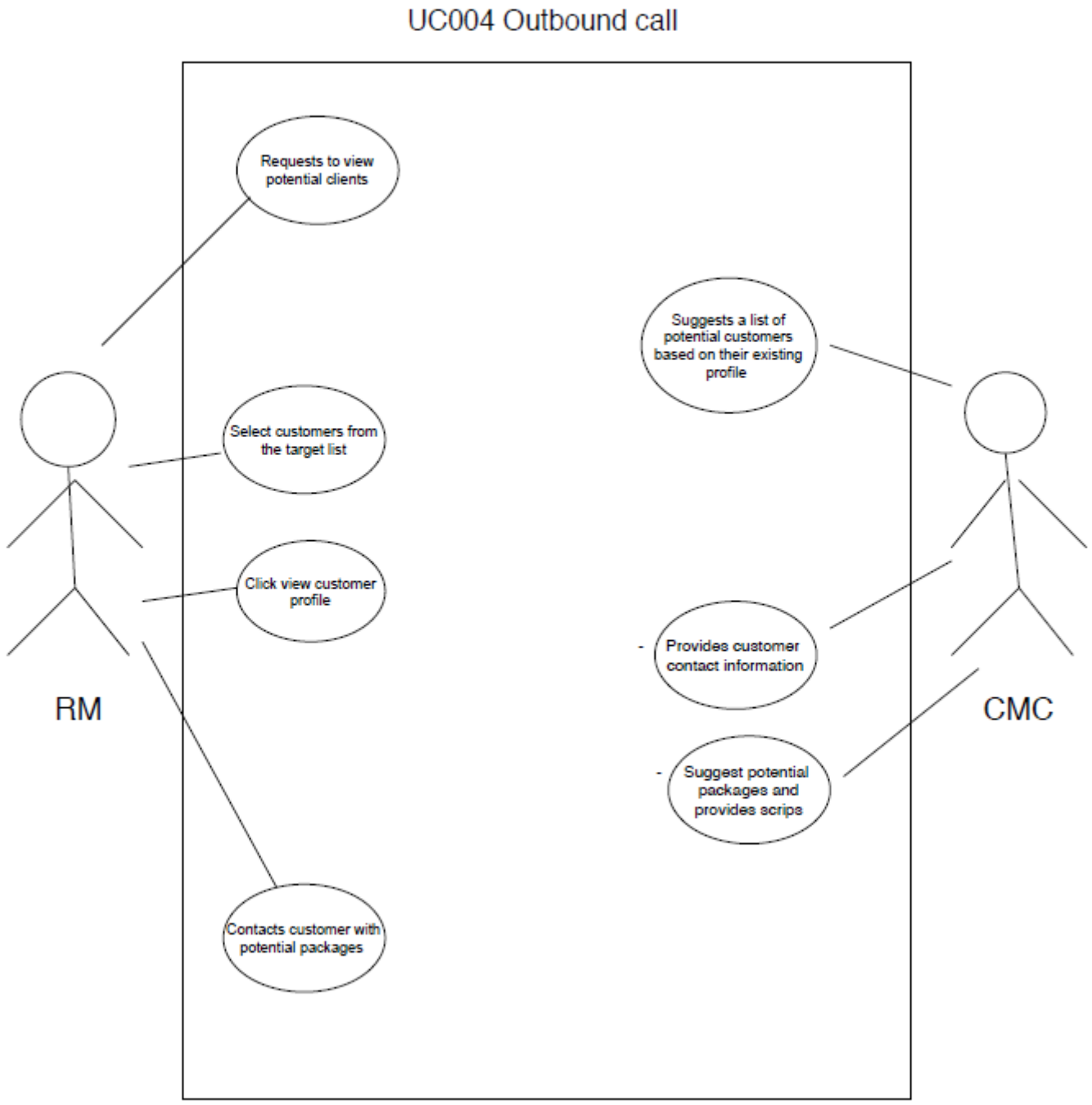
Create Customer Profile



Inbound Call



Outbound Call


UC004 Outbound call
Requests to view potential clients
Select customers from the target list
Click view customer profile
Contacts customer with potential packages
Suggests a list of potential customers based on their existing profile
Provides customer contact information
Suggest potential packages and provides scrips
RM
CMC

5. Test

The final stage of design-thinking, is testing, however, it is important to remember the iterative nature of design-thinking. From testing the complete product, we can redefine problems that were incorrectly identified earlier in the design-thinking process. In doing this, we gain further insight into how users feel, and our empathy with them is strengthened. Adjustments are made to the product to solve any newly found problems. In this project, testing was not undertaken

The design-thinking approach cannot be measured as effective, as it is an iterative approach. The nature of design-thinking renders every cycle of the process different. However, in the completion of every cycle, the foundational belief of the design-thinking process is achieved, to gain a greater sense of empathy with the customer.

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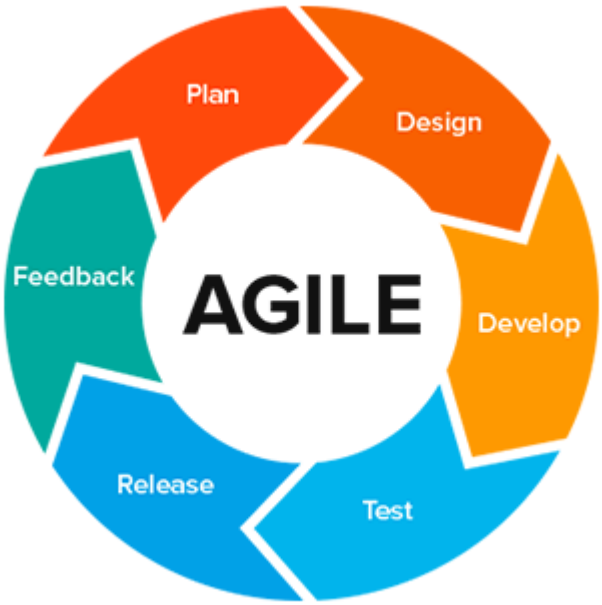
04 - Agile Methodology

The Agile Methodology is based on repetitive and incremental development instead of a linear approach. It focuses on the splitting of a project into various small groups of tasks called sprints rather than building the entire system at once. It is highly suitable for projects which involve a lot of teamwork and collaboration. The agile method involves gathering a lot of feedback from clients and testers of tasks completed in different sprints which adds accountability to the whole process. The planning, design, development, testing, release, and feedback are in a constant cycle in a defined period of time.



The planning of a project through this approach emphasizes deliverables which are prioritized from a business perspective as determined by the client. Each sprint is usually of a specific duration (usually in weeks) with tasks pre-planned and prioritized for the given sprint. This approach allows the development phase to be more flexible as requirements from the client may change over time to which the developers must be ready to adapt. There is a greater sense of transparency between the customer and developers, and the schedule and cost are predictable.

SCRUM, which is an Agile Development Methodology, was chosen for this project alongside design thinking to develop the new information system and deliver new IS capability in a cross-functional manner. It involved

group participation from different members for decision-making in the team which Scrum makes certain of.

Benefits of using Scrum

1. It allows for changes to be made after the initial planning stage. It follows the client's requirements changes as continual feedback is given. The travel company (product owner) and the development team would be aware of any changes during the development process. If the product owner required any new changes, they could be easily implemented during the planning/development stage. Contrarily, if the waterfall development method was used, any new changes would be costly.

2. It is easier to add features that will keep the product up to date with the latest developments in the industry.

3. At the end of each sprint, project priorities are evaluated. This allows clients to add their feedback so that they ultimately get the product they desire. The testing at the end of each sprint ensures that the errors are caught in each cycle.

4. Efficiency and organisation. Cross-functional teams which are self-organised can help the Relationship Managers develop cooperation with the Travel Company.

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05 - Assumptions

According to PMBOK® Guide 5th Edition, Project Assumption is "A factor in the planning process that is considered to be true, real or certain often without any proof or demonstration".

An assumption is what you believe to be true. These are anticipated events or circumstances that are expected during your project's life cycle. You make assumptions based on your experience or the information available on hand.

Assumptions may not end up being true. Sometimes, they can be false and it may affect your project. This adds risk to the project. In the development process of projects, there are many things that are meant to be assumed like the pre-existing of a certain feature in a system. This project too has certain assumptions made by us which are as follows:

- We have assumed that a 'Profiler Tool' exists within the new system which assists customer with registration and profile creation through which we can suggest them appropriate packages.
- We have assumed that whenever an RM reaches out to a customer, they will let them know that the call will be recorded for quality and training purposes.
- We have assumed that there exist basic features to which we are providing upgrades.
- We assume that customer information is encrypted and is secure so that the customer data is not available to everyone.
- We have assumed that after a sale has been made (post-sale), flights and accommodation are handled by a third-party.
- We have assumed that RMs store call logs after every conversation on the phone.

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06 - Work Products

The user story map was the first backlog (work product) the team has produced before creating the diagrams. This user story map gave us an entire view of different user stories and their priorities which helped us to create use case narratives later on.

After the user story map, the team created Use cases to set the project scope. These display messages between the system and the actors. The use cases were created by combining 2-3 user stories and the team was able to create use case narratives out of the use cases. These were UC001 Create Employee profile, UC002 Create customer profile, UC003 Inbound calls, and UC004 Outbound calls. These use case narratives have provided requirements and actors related to how the system will operate.

The collaboration diagrams (communication diagram) were created based on UC002 Create Customer Profile and UC004 Outbound call. It shows different messages between objects and the links between the objects.

The diagram that displays different dynamics and the workflow of the system is the Activity diagram. The two activity diagrams that were produced in this project were based on use cases, UC002 Create Customer profile, and UC004 Outbound call. They model data flows, such as the relationship manager requesting to view information and call management centre providing this information.

Lastly, the Class diagram is a structural diagram which shows the entire structure of the system. It states systems classes such as CMC, Call logs, RM and Account Management portal and describe their attributes, methods, and relationship among these classes.

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07 - Competitive Advantages & Failures

Competitive Advantages

The development of this call management system will enable the travel company to enhance its existing business operations, whilst improving the call flow rate and thereby driving sales revenue. This will enable them to gain a competitive edge against their industry competitors.

The use of the Profiler Tool as a skill matcher will ensure greater internal and external levels of satisfaction:

- Relationship Managers (RMs) can tailor their service for each customer and improve their sale technique as each customer profile is easily accessible.
- Customers can skip traditional onboarding questions over the phone as they can submit these details online, thereby saving time.

Additional benefits from the implementation of this system include, but are not limited to:

- RMs who conduct outbound calls can successfully market holiday packages to customers through a customised target list which will enable a seamless service experience to the end-customer.
- Inbound calls received by the travel company will be assisted by a CMC that features an automated branch exchange to route calls and minimise costs.
- Customers will experience shorter waiting times and will be effectively matched with a suitable RM. This system will prioritise customers based on the caller's value and direct higher-score customers to a RM who can suit their needs.

- Convenience - customers can create their profile at their own leisure, as an online system would enable 24-hour registration.
- An interactive voice response unit would assist with managing customers during busy times, enabling RMS to service customer at the earliest available opportunity. You can also save on time-costs as this voice unit can also provide options for customers to select/explain their reasoning for calls and personalise their queries. This will enable calls to be routed to an appropriate RM in a timely manner.
- Call logs will be stored within the system, which can easily be accessed by RMs to obtain information from previous conversations. This will be useful for RMs because they can quickly gain an understanding of the customer's needs. Customers will also benefit from this as they may not have to repeat their past queries.

Failures

The failure of the project will result in cash outflows due to the Research & Development (R&D) costs associated with designing the Call Management System. Failure to implement this new system will hinder the call management centre as inefficient operations. Customers may experience long wait times as call flow rates may be delayed by having to manually match each customer with an appropriate RM. Customers may not be satisfied with their service and may resort to use another travel company, which would mean that the travel company would lose potential sales revenue and market share.

If RMs have to manually input each customer's details into the Travel Company's database, this would also charge additional time-costs for the travel company.

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08 - Conclusion

The travel agency required swift management of call and sales operations in order to increase its efficiency. Therefore, the developers have decided to work with SCRUM methodology which is a part of the agile methodology. It has allowed the team to undertake design thinking and create different types of work products in a short period of time to ensure certainty of the new business operations. This methodology also provided the team an opportunity to continue to develop with transparency and ensure that the client was aware of the development stages.

The different prototypes that we have designed are collaboration diagrams, activity diagrams, user story map, use case narratives, use case maps and a class diagram. During the development of these prototypes, there were some features that needed clarification. For example, what if the customer didn’t have a profile in order for the CMC to match it with an appropriate RM? Assumptions were made as a team to direct the call to the next available RM and RM will keep a logs and proceed to obtain customer details for future reference if the customer was interested. These types of decisions allowed the prototype developments of the automated systems to be clear and precise. In conclusion, this project report contains prototypes which have proved that the additional systems and objects such as the Target List and Profiler Tool will perform adequately in order to increase efficiency of the operation for RMs, Customers and the Travel Agency itself. The visual presentation of these prototypes will provide a clear depiction of what the team has envisioned these operations will bring to the agency for its profitable operations.

References

Alder, G & Benson, D. 2020, diagrams.net, diagramming software, viewed 20 May 2020, https://app.diagrams.net/