Create: Signature Assignment - Simulation - Deliverable #3

Group 2 (Diversity Consulting)

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College of Professional Studies, Northeastern University

PJM6630: Requirements Analysis and Design

Professor: Ann-Marie Dunphy

May 17, 2023

Executive Summary

This document presents our proposal and encompasses our research and solutions to aid TravelNow in reaching its business objective. The proposal outlines a comprehensive plan to develop and implement a new product that aims to enhance the overall user experience and customer satisfaction.

By analyzing the existing landscape and conducting thorough market research, the product proposal takes into account the evolving needs of travelers, travel agents, suppliers, and the internal teams at TravelNow. It ensures that the product aligns with industry best practices while also considering the unique requirements and expectations of stakeholders at every level. Thus, the proposal encompasses a comprehensive context diagram, stakeholder onion map, product use case, business use case, functional and non-functional requirements, and a product prototype.

In sum, this proposal presents a strategic roadmap for TravelNow to enhance its position in the travel industry. By developing and implementing the proposed product, TravelNow will be able to provide a seamless and personalized travel booking experience, increase customer satisfaction, and streamline internal processes. With the proposed product, TravelNow is poised to excel in an ever-evolving market, meeting the needs of its customers and staying ahead of the competition.

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Signed Agreement

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Consulting Agreement
to provide
Requirements Analysis and Design Consulting

</div>

The consulting agreement ("the agreement") is made and entered on the day __04/23/2023__ by and between <u>TravelNow</u> ("the client") and <u>Diversity Consulting (PJM6630 Group 2)</u> ("the consultant").

Services and Timeline
The consultants are expected to complete the following through a 5-week consulting engagement with TravelNow.
- Weekly client meetings
- Context diagram, Business use cases (BUCs), Product use cases (PUCs), and Scenarios
- Well-written, prioritized, and jargon-free functional and non-functional requirements.
- Modeled and prototyped requirements
- Final Client Presentation
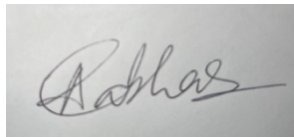
Consulting Contract Terms
This is a five-week consulting engagement. The consultants meet with the client every Monday to facilitate brainstorming, election, design session, or present analysis. You agreed to submit everything to Harisha Patel by Sunday night so that she can share it with her team.

Meetings	Information Provided by Client	Deliverable Promised by Consultant

1 - Kickoff Meeting (2nd week of class)	- Agreement
	- Company Overview and Employee Profiles
	Documents from internal brainstorming sessions:
	   - Business Rules
	   - Business Requirements
	   - Business Use Case (BUC)
	     Summary list
	   - Customer Segment
		- Signed Agreement
		- Context Diagram with business events
		- Product Use Cases
		- Stakeholder Onion Map
		- Living Glossary

Meetings	**Information Provided by Client**	**Deliverable Promised by Consultant**
2 - 2nd week of engagement (3rd week of class)	- Customer Segment Brainstorm - Competition Brainstorm - Requirement Expectations	- Documented and prioritized functional requirements - Documented and prioritized non-functional requirements

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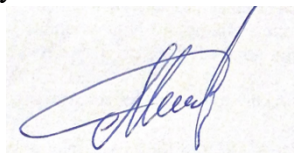| Meetings	Information Provided by Client	Deliverable Promised by Consultant
		- Respond to any emails from TravelNow staff
3 - 3rd week of engagement (4th week of class)	- TravelNow will provide access to PowerApps	- Start prototyping application - Living Glossary
Meetings	Information Provided by Client	Deliverable Promised by Consultant
4 - 5th week of engagement (6th week of class)	- TravelNow Branding to prepare your presentation	- Compile all your deliverables into one file - Present to client your prototype and recommendations for next steps - Submit final prototype - Living Glossary

Agreement

Aabhas Maru
Lead Business Analyst

Harisha Patel
Harisha Patel

Mingben Sui
Lead Requirements Analyst

Nilufar Masimova
Lead Designer

Prachee Mishra
Client Facing Analyst

Shreya Mallya
Support Analyst

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Context Diagram with Business Events

The following context diagram provides a high-level overview of the system and its external entities, identifying the scope and boundaries of the system. It gives an understanding of the interactions and dependencies between the system and its environment. By presenting a clear picture of the system context, the diagram enables informed decision-making and efficient resource allocation, leading to successful system development and operation.
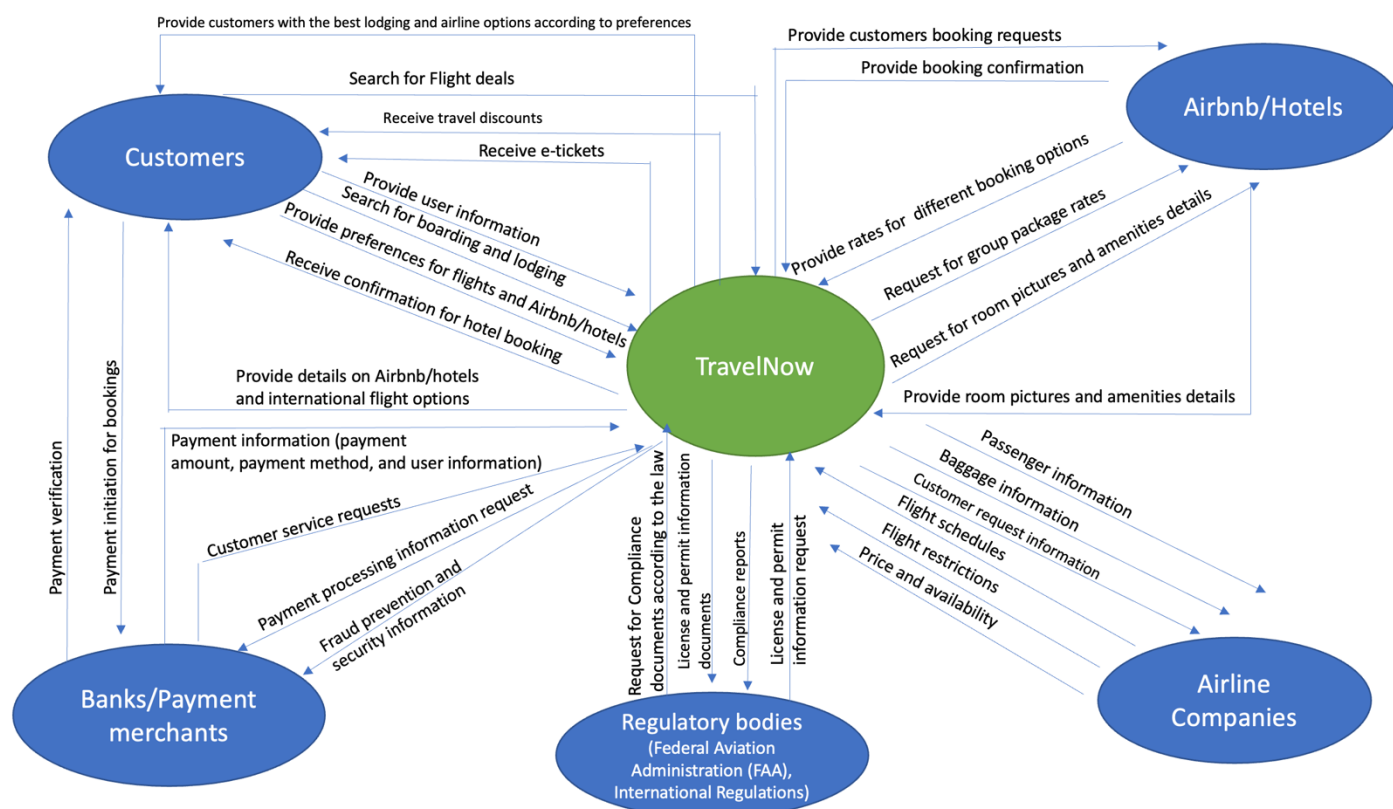
The following table shows all the inputs and outputs between the system and different stakeholders related to the process.

| Stakeholder/Adjacent System	Input	Output
Customers	User information Travel details Payment information	Booking confirmation Payment confirmation E-tickets Cancellation and refund information
Airline Companies	Flight schedules Price and availability Flight restrictions Flight status updates Ancillary services	Passenger information Baggage information Customer request information

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Airbnb/Hotels	Room availability and rates Hotel location and proximity Room amenities Hotel Policies Room descriptions and photos	Bookings Room preferences and special requests Customer service requests (changes to a booking, refund requests, or complaints)
Banks/Payment Merchants	Payment processing information Security information Fraud prevention information Payment status updates	Payment information (payment amount, payment method, and user information) Customer service requests
Regulatory Bodies **(Federal Aviation Administration (FAA), International Regulations)**	Compliance requirements Reporting requirements License and permit information	Compliance reports Audit results License or permit information documents Booking data

Product Use Cases

The following product use case helps to understand the various ways different actors will interact with the product, enabling us to design and develop a product that meets the needs of our customers. By documenting the specific user scenarios and the steps involved in each, we can ensure that our product is intuitive, efficient, and effective, ultimately resulting in a positive user experience. The use case also helps us to identify potential issues or areas for improvement, allowing us to refine and optimize the product. By leveraging the product use case, we can deliver a product that not only meets but exceeds our customers' expectations.

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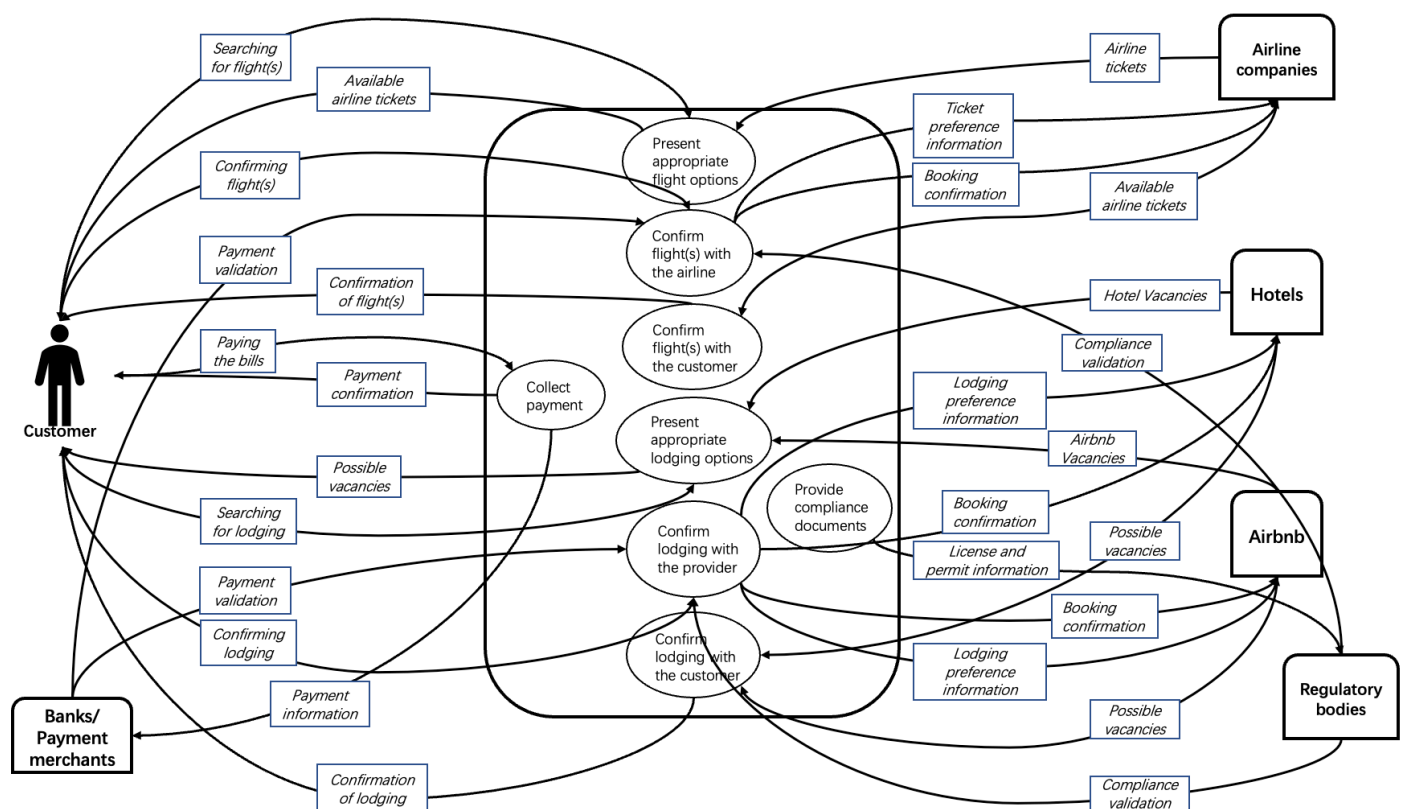
Actors:
Customers, Banks/Payment merchants, Airline companies, Hotels, Airbnb, and Regulatory bodies

BUCs (Business Use Cases):
Present appropriate flight options.
Confirm flight(s) with the airline.
Confirm flight(s) with the customer.
Present appropriate lodging options.
Confirm lodging with the provider.
Confirm lodging with the customer.
Provide compliance documents.
Collect payment.

Events:
1. The customer wants to search for flight(s). Our product can present appropriate flight options fitting the customer's criteria. However, at the same time, we need the airline companies to give us airline tickets that are available from different sources, including United Airlines, Delta Airlines, JetBlue, Spirit, Frontier, American Airlines, Alaska Airlines, Hawaiian Airlines, and some international airlines (if possible, in the future). Then, our product can show the customer all available airline tickets that can meet the data, time, from destination to destination, and class type preference.
2. The customer wants to search for lodging. Our product can present appropriate lodging options fitting the customer's criteria. However, at the same time, we need Airbnb and hotels to give us vacancies from different sources, including Airbnb and all the hotel brands. Then, our product can show the customer all possible vacancies that meet the date, time, and location preference.
3. The customer wants to confirm the flight(s). Our product can confirm flight(s) with the airline first. We will send the ticket preference information to airline companies, and then they will send the available airline ticket information back to our product, and our product can confirm these with the customer. At the same time, the customer needs to pay the bills, and our product will collect their payment information and convey it to the banks/payment merchants. After our product receives the payment validation, our product will send the booking confirmation to airline companies and send the payment confirmation to the customer. And then, our product will send the confirmation of flight(s) to the customer.
4. The customer wants to confirm the lodging. Our product can confirm lodging with the provider first. We will send the lodging preference information to Airbnb/hotels, and then they will send the possible vacancies back to our product, and our product can confirm these with the customer. At the same time, the customer needs to pay the bills, and our product will collect their payment information and convey it to the banks/payment merchants. After our product receives the payment validation, our product will send the booking confirmation to Airbnb/hotels and send the payment confirmation to the customer. And then, our product will send the confirmation of lodging to the customer.
5. Our product can also provide regulatory bodies with our compliance documents, including license and permit information. And then, after we receive the compliance validation, they will also support our confirming flight(s) with the airline and our confirming lodging with the provider.

Stakeholder Onion Map

The following stakeholder onion map is a valuable tool for understanding the complex network of stakeholders involved in a project or organization. By identifying and analyzing the different layers of stakeholders, from the most involved to the least, the onion map allows for a comprehensive view of their interests, needs, and influence. This map helps to prioritize stakeholders and their expectations, facilitate effective communication and decision-making, and ensure that the project or organization's goals align with stakeholders' needs. By leveraging this onion map, we can manage stakeholder relationships, build trust, and achieve successful outcomes that benefit all involved.
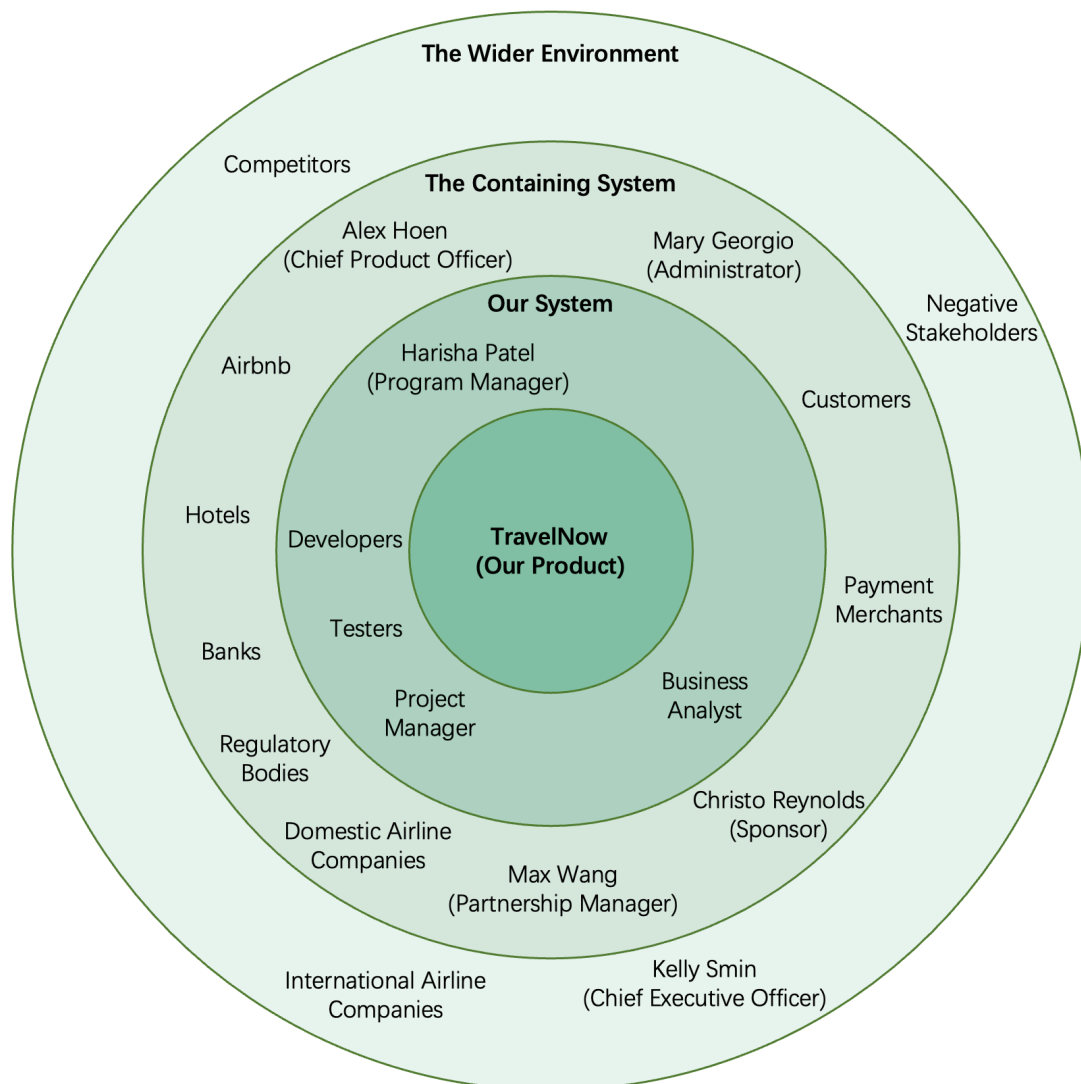
Stakeholder Analysis (Onion Diagram):
Our System:
•   **Business Analyst**: The business analyst is a professional who can analyze business processes and data to identify opportunities for improvement and provide insights for decision-making. They are a key member of the project team responsible for designing and building the TravelNow system. As part of the inner ring, the business analyst works closely with other team members to ensure the system meets the needs

of all stakeholders, including customers, partners, employees, and owners.

- **Project Manager**: Project managers are professionals who plan, organize, and oversee projects from start to finish, ensuring they are completed on time, within budget, and meet the required objectives. As part of the inner ring, the project manager works closely with other team members, including the business analyst, to ensure that the system meets the needs of all stakeholders and achieves the project objectives.

- **Developers**: Developers are professionals who write, test, and maintain software programs and applications using programming languages and other tools. They are responsible for building the TravelNow system. Developers work closely with other team members, such as the business analyst and project manager, to ensure that the system meets the functional and non-functional requirements, is scalable and maintainable over time, and is delivered on time and within budget. The developers' expertise in software development is essential to the success of the TravelNow system, and their close collaboration with other team members is critical to ensuring that the system meets the needs of all stakeholders.

- **Testers**: Testers are professionals who evaluate software and applications to identify and report bugs and ensure they meet the required quality standards. Testers work closely with other team members, such as developers and the project manager, to identify defects and ensure that they are addressed before the system is released. Their expertise in testing is essential to ensuring the reliability and user-friendliness of the system, and their close collaboration with other team members is critical to ensuring that the system meets the needs of all stakeholders.

- **Harisha Patel (Program Manager)**: The program manager will be responsible for overseeing projects, thus allowing TravelNow to successfully enter the online travel shopping space. She is also responsible for overseeing the successful delivery of the TravelNow system. Harisha Patel works closely with other team members, such as the business analyst, project manager, developers, and testers, to ensure that the system meets the requirements and objectives of all stakeholders. The program manager's role is critical to ensuring that the project stays on track, is delivered on time, and meets the expected quality standards. Her close collaboration with other team members is essential to ensuring that the TravelNow system is accessible, reliable, and user-friendly for anyone, anywhere, and at any time, which aligns with the company's mission.

The Containing System:

- **Customers**: Customers should be placed in the middle ring (The Containing System) of the Stakeholder Onion Map because they are the primary users of the TravelNow product and have a significant impact on its success. As part of the middle ring, customers have a direct relationship with the TravelNow system and influence its design and functionality. The system needs to be accessible, reliable, and user-friendly to meet their needs and expectations, which aligns with the company's mission. Therefore, understanding and meeting customer requirements should be crucial enough.

- **Banks/Payment Merchants**: They play a critical role in the TravelNow system's financial transactions. They interact directly with the system, handling payment processing and financial transactions on behalf of customers. The TravelNow system must ensure the security, reliability, and accuracy of these financial transactions to maintain the trust and confidence of both customers and banks/payment merchants. Therefore, banks/payment merchants have a significant influence on the TravelNow system's design and functionality, and their requirements must be considered during the requirements analysis and design work.

- **Christo Reynolds (Sponsor)**: Christo Reynolds has invested a lot of money in our product and wants to get updates on the status of the requirements project from time to time. Christo Reynolds has a significant influence on the TravelNow system's success. The sponsor provides funding and resources for the project,

which directly impacts its development and delivery. Additionally, the sponsor has a vested interest in the TravelNow system's success and ensures it aligns with the company's mission and goals. Therefore, understanding the sponsor's requirements and expectations is crucial to the success of the TravelNow system.

- **Max Wang (Partnership Manager)**: The Partnership Manager establishes and maintains relationships with partner airlines and hotels, negotiating data-sharing agreements that enable the TravelNow system to access flight and hotel availability information in real-time. Therefore, her requirements and expectations must be considered during requirements analysis and design work to ensure the TravelNow system's integration with partner systems is seamless and secure.

- **Domestic Airline Companies**: They are key partners in the TravelNow system's success. Domestic Airline Companies provide TravelNow with real-time access to flight availability information, allowing customers to quickly and easily book last-minute flights. Therefore, their requirements and expectations must be considered during requirements analysis and design work. Additionally, Domestic Airline Companies have a vested interest in maintaining the security and accuracy of their flight information, which must be addressed to maintain their trust and partnership with TravelNow.

- **Regulatory Bodies**: Regulatory Bodies set and enforce rules and regulations that govern the travel industry, including consumer protection laws, data privacy regulations, and security standards. Compliance with these regulations is critical for TravelNow to maintain its reputation and partnerships, so their requirements and expectations must be considered. Additionally, the consequences of non-compliance with these regulations can be severe, including legal penalties and reputational damage, so addressing their concerns is crucial for the success of the TravelNow system.

- **Airbnb/Hotels**: They are key partners of the TravelNow system. They are external stakeholders who provide accommodations to TravelNow's customers. The success of TravelNow relies heavily on the quality and availability of accommodations provided by Airbnb/Hotels. Therefore, it is essential to consider their needs and expectations during the requirements analysis and design work to ensure a smooth and efficient system. Additionally, building and maintaining strong partnerships with Airbnb/Hotels is critical for the long-term success and growth of TravelNow, making them a significant stakeholder to consider.

- **Alex Hoen (Chief Product Officer)**: Alex is an internal stakeholder who oversees the development and deployment of TravelNow's products. He plays a crucial role in ensuring that the product meets the needs and expectations of external stakeholders, such as customers and partners, while also aligning with the company's strategic goals. Therefore, it is essential to consider his vision and input during the requirements analysis and design work to ensure the product's success. Furthermore, building a strong relationship with Alex is critical for effective communication and collaboration within the TravelNow team.

- **Mary Georgio (Administrator)**: She is responsible for the internal administrative operations of TravelNow, such as managing payroll, human resources, and finances. Her work is critical to ensuring that the company runs smoothly and efficiently, and she is an important stakeholder in the success of the organization. Moreover, her role is not directly involved in the development or deployment of TravelNow products, which places her outside of the inner ring of the Onion Map.

The Wider Environment:

- **Kelly Smin (Chief Executive Officer)**: She operates within the wider environment of the company. She is responsible for the overall performance and success of the company and must take into account external factors such as market trends, competition, and industry regulations. She interacts with stakeholders such

as investors, media, and other industry leaders to shape the company's strategic direction and ensure its long-term viability.

- **International Airline Companies**: They are external entities that are not directly involved in the operations of TravelNow but have a significant impact on its business. As Max (Partnership Manager) is working on agreements with international airlines, it is crucial to consider their interests and concerns in terms of partnership and collaboration. International airline companies may have their own set of regulations and standards that TravelNow needs to comply with, and they may also have their own business goals and priorities that need to be aligned with TravelNow's mission and vision. Therefore, understanding and engaging with international airline companies as stakeholders is also important to the success of TravelNow's business.

- **Competitors**: Competitors are also external entities that operate in the same market as TravelNow. Competitors can impact the business through their marketing strategies, pricing strategies, customer retention strategies, and technological advancements. It's essential for TravelNow to monitor the activities of its competitors and keep up with their latest offerings to stay competitive in the market. By placing competitors in the outer ring (The Wider Environment), we acknowledge their influence on TravelNow but also highlight the importance of keeping a watchful eye on them.

- **Negative Stakeholders**: Negative stakeholders can be understood as those who might have a negative impact on the product or be negatively impacted by it. Examples could include activist groups, environmental organizations, or other entities that may have concerns about the social or environmental impact of the product. These stakeholders are placed in the outer ring of the stakeholder onion map because they are not directly involved in the project, but they may still have an influence on it. By considering the concerns and potential impact of negative stakeholders, the project team can try to anticipate and address any issues that may arise, thereby mitigating potential negative effects.

Functional Requirements

The following functional requirements are a critical component of the project, as they define the specific features and capabilities that the product must possess to meet its intended goals. They provide a clear roadmap for outlining the necessary functionality and behavior of the system. By documenting these requirements in detail, we can ensure that the product meets the needs of its users, performs its intended functions, and operates efficiently. Functional requirements help to establish clear project goals and success criteria, allowing for effective project management and quality assurance. By adhering to the functional requirements, we can build a reliable, robust, and user-friendly system that meets the needs of all stakeholders.

Requirement #: 1	Requirement Type: Functional
Event: Provide customer information	PUC #: PUC Deliverable #1
Description of requirement: The product shall allow customers to create their profiles for entering their credentials.	
Rationale for requirement: Customers want to be able to use their saved personal information while making bookings.	
Fit criteria: Customers must be able to see their saved profiles after they create them.	
Priority Rating: 6.4	Dependency: N/A
History: 04/28/2023 – Nilufar Masimova	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

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Requirement #: 2	Requirement Type: Functional
Event: Searching for flight(s)	PUC #: PUC Deliverable #1
Description of requirement: The product shall allow customers to search for flights.	
Rationale for requirement: Customers want to have a search to control their choices on flights.	
Fit criteria: Customers must see available flights after they search.	
Priority Rating: 6.8	Dependency: Requirement 1
History: 04/28/2023 – Nilufar Masimova	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 3	Requirement Type: Functional
Event: Searching for lodging	PUC #: PUC Deliverable #1
Description of requirement: The product shall allow customers to search for lodging.	
Rationale for requirement: Customers want to have control over their choices for getting appropriate options.	
Fit criteria: Customers must see available lodgings after they search.	
Priority Rating: 6.4	Dependency: Requirement 1
History: 04/28/2023 – Nilufar Masimova	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 4	Requirement Type: Functional
Event: Paying the bills	PUC #: PUC Deliverable #1
Description of requirement: The product shall allow customers to proceed with their booking payments online.	
Rationale for requirement: As a part of enhanced user experience, customers want to be able to pay online for their bookings.	
Fit criteria: The product should offer multiple payment options, including credit cards and debit cards, to accommodate users' payment preferences.	
Priority Rating: 5.7	Dependency: Requirement 1, 2, and 3
History: 04/28/2023 – Nilufar Masimova	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 5	Requirement Type: Functional
Event: Airline tickets	PUC #: PUC Deliverable #1
Description of requirement: The product shall collect airline ticket information from Airline companies to show them to customers.	
Rationale for requirement: Airline companies need to show currently available airline tickets to customers to help them make decisions to buy their desired tickets based on their preferences.	
Fit criteria: Customers must use the product to see the currently available airline tickets successfully from different airline companies.	
Priority Rating: 4.1	Dependency: N/A
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 6	Requirement Type: Functional
Event: Ticket preference information	PUC #: PUC Deliverable #1
Description of requirement: The product shall collect ticket preference information from customers to show them to airline companies.	
Rationale for requirement: Airline companies need ticket preference information from customers to offer more personalized services based on their preferences.	
Fit criteria: Airline companies should see the ticket preference information inputted by customers.	
Priority Rating: 6.3	Dependency: Requirement 1, 2, and 5
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 7	Requirement Type: Functional
Event: Available airline tickets	PUC #: PUC Deliverable #1
Description of requirement: The product shall present the customer with available flight tickets based on the data they input into the search.	
Rationale for requirement: Airline companies need to show the available airline tickets that fit the customers' preference information after they input it, thus allowing them to make the final confirmations.	
Fit criteria: Customers must see the available flight tickets after they input the data into the search.	
Priority Rating: 7	Dependency: Requirement 1, 2, 5, and 6
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 8	Requirement Type: Functional
Event: Booking confirmation	PUC #: PUC Deliverable #1
Description of requirement: The product shall send the booking confirmation to airline companies after customers confirm flights successfully.	
Rationale for requirement: Airline companies need to receive the booking confirmation from customers to give them official flight tickets, thus allowing them to use the tickets to board successfully.	
Fit criteria: Airline companies must receive the booking confirmation as well after customers confirm flights.	
Priority Rating: 4.9	Dependency: Requirement 1, 2, 4, 5, 6, and 7
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 9	Requirement Type: Functional
Event: Searching for accommodation	PUC #: PUC Deliverable #1
Description of requirement: The product shall have a tab to search for the availability of hotels/Airbnb on their travel dates.	
Rationale for requirement: The customers will be able to select accommodation according to the availability of the Hotels/Airbnb on their travel dates.	
Fit criteria: Customers should see a tab to check the availability of hotels/Airbnb.	
Priority Rating: 7.5	Dependency: N/A

History: 04/28/2023 - Shreya
Supporting Materials: Context Diagram, PUCs, Living Glossary

Requirement #: 10	**Requirement Type**: Functional
Event: Lodging preference	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall show each lodging hotel/Airbnb with rating feedback from previous customers.	
Rationale for requirement: Customers will be able to select their accommodation based on the best rating and feedback and make an informed decision.	
Fit criteria: There should be stars next to the name of the hotel/Airbnb with a number of feedbacks.	
Priority Rating: 5.9	**Dependency**: N/A
History: 04/28/2023 - Shreya	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 11	**Requirement Type**: Functional
Event: Lodging preference	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall provide a list of the five most-rated accommodations for each city.	
Rationale for requirement: Customers will be able to see the five best hotels/Airbnb in each city.	
Fit criteria: Customers should see the information of the five best accommodations, based on user feedback, showing up as soon as they search for any travel destination.	
Priority Rating: 4.2	**Dependency**: N/A
History: 04/28/2023 - Shreya	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 12	**Requirement Type**: Functional
Event: Group booking	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall provide group booking discounts for a group of 10+ people.	
Rationale for requirement: Customers will be able to save costs with group booking discounts.	
Fit criteria: As soon as the customers add the guest count to any number more than 10, a discount code will appear.	
Priority Rating: 7.4	**Dependency**: N/A
History: 04/28/2023 - Shreya	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 13	**Requirement Type**: Functional
Event: Total amount outstanding	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall allow customers to see the total amount to be paid in correspondence to the services they have selected.	
Rationale for requirement: The customers can see the details of the total amount outstanding based on the services selected.	
Fit criteria: Details of the services should be visible, and the total amount outstanding must be visible.	

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Priority Rating: 7.1	**Dependency**: N/A
History: 04/29/2023 - Aabhas	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 14	**Requirement Type**: Functional
Event: Debit/Credit Card Options	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall allow customers to have the option to select payment methods.	
Rationale for requirement: The customers will have different options to pay based on their preferences.	
Fit criteria: Customers should see a button for them to select payment methods.	
Priority Rating: 7.2	**Dependency**: Requirement 13
History: 04/29/2023 - Aabhas	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 15	**Requirement Type**: Functional
Event: Itinerary confirmation	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall allow customers to have the option to confirm their booking details before making the payment.	
Rationale for requirement: It will help customers to double-check their booking details before making the payment.	
Fit criteria: Customers should see a separate page that summarizes the booking details before making final payments.	
Priority Rating: 7.6	**Dependency**: Requirement 13, and 14
History: 04/29/2023 - Aabhas	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 16	**Requirement Type**: Functional
Event: Payment confirmation	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall allow the payment confirmation page to appear with the order number/receipt number once the customer confirms the itinerary.	
Rationale for requirement: It can ensure that the customers' bookings have been made.	
Fit criteria: The page should display the order number/receipt number.	
Priority Rating: 7.5	**Dependency**: Requirement 13, 14, and 15
History: 04/29/2023 - Aabhas	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Prioritized Functional Requirements

The following table describes the prioritization of the functional requirements we considered for the product. We used the Volere model for prioritization. Prioritization enables us to focus our efforts on the most critical features and capabilities of the system. By identifying and prioritizing the functional requirements based on their importance and impact on the system's success, we can ensure that the team's efforts are directed toward building a system that meets the highest-priority needs of its users and stakeholders. By prioritizing

the functional requirements, we can ensure that the system's most important features are delivered first, providing value to the users and stakeholders early in the development cycle and setting the stage for a successful project outcome.

Requirement	Number	Factor - score out of 10	%Weight applied	Factor - score out of 10	%Weight applied	Factor - score out of 10	%Weight applied	Factor - score out of 10	%Weight applied		Total Weight
		Value to Customer	40	Value to Business	20	Minimize Implementation Cost	10	Ease of Implementation	30	Priority Rating	100
Requirement 1	1	8	3.2	6	1.2	5	0.5	5	1.5	6.4	
Requirement 2	2	9	3.6	8	1.6	4	0.4	4	1.2	6.8	
Requirement 3	3	9	3.6	8	1.6	3	0.3	3	0.9	6.4	
Requirement 4	4	7	2.8	9	1.8	2	0.2	3	0.9	5.7	
Requirement 5	5	5	2	6	1.2	3	0.3	2	0.6	4.1	
Requirement 6	6	9	3.6	8	1.6	2	0.2	3	0.9	6.3	
Requirement 7	7	9	3.6	9	1.8	1	0.1	5	1.5	7	
Requirement 8	8	1	0.4	8	1.6	5	0.5	8	2.4	4.9	
Requirement 9	9	9	3.6	8	1.6	5	0.5	6	1.8	7.5	
Requirement 10	10	7	2.8	6	1.2	4	0.4	5	1.5	5.9	
Requirement 11	11	6	2.4	5	1	2	0.2	2	0.6	4.2	
Requirement 12	12	7	2.8	7	1.4	8	0.8	8	2.4	7.4	
Requirement 13	13	6	2.4	9	1.8	8	0.8	7	2.1	7.1	
Requirement 14	14	6	2.4	8	1.6	8	0.8	8	2.4	7.2	
Requirement 15	15	8	3.2	5	1	7	0.7	9	2.7	7.6	
Requirement 16	16	8	3.2	6	1.2	7	0.7	8	2.4	7.5	

Non-functional Requirements

The following non-functional requirements are essential specifications for a project, as they define the qualities and attributes of the system that are critical for its success but are not directly related to its functional capabilities. These requirements include performance, security, scalability, usability, and reliability, among others. By documenting these requirements, we can ensure that the system operates effectively and efficiently under various conditions and user scenarios. Non-functional requirements can help to establish clear expectations for system performance and quality, facilitating effective project management and testing. By adhering to these requirements, we can build a system that is not only functional but also reliable, secure, and user-friendly, meeting the needs of all stakeholders.

Requirement #: 17	**Requirement Type**: Non-functional
Event: License and permit information	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall provide the compliance documents, such as license and permit information, to show that it has a compliant business qualification.	
Rationale for requirement: Regulatory bodies need to see compliance documents from the product to	

allow it to be operated legally and compliantly in the current market.	
Fit criteria: The compliance documents must comply with all applicable regulatory standards and requirements.	
Priority Rating: 4.2	**Dependency**: N/A
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 18	**Requirement Type**: Non-functional
Event: Compliance validation	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall get compliance validation from regulatory bodies to allow customers and airline companies to confirm flight tickets.	
Rationale for requirement: Airline companies need to see the compliance validation of the product to confirm the final partnership.	
Fit criteria: All compliance requirements related to the flights are met and maintained to retain compliance validation.	
Priority Rating: 4.2	**Dependency**: Requirement 17
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 19	**Requirement Type**: Non-functional
Event: Compliance validation	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall get compliance validation from regulatory bodies to allow customers and hotels/Airbnb to confirm lodging.	
Rationale for requirement: Hotels/Airbnb should need to see the compliance validation of the product to confirm the final partnership.	
Fit criteria: All compliance requirements related to the lodging are met and maintained to retain compliance validation.	
Priority Rating: 3.9	**Dependency**: Requirement 17
History: 04/29/2023 – Mingben Sui (Dice)	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 20	**Requirement Type**: Non-functional
Event: All	**PUC #**: PUC Deliverable #1
Description of requirement: The product shall be accessible to customers with disabilities.	
Rationale for requirement: By ensuring accessibility, the travel and booking website can cater to a broader audience, including people with disabilities.	
Fit criteria: The product should meet recognized accessibility standards.	
Priority Rating: 5.5	**Dependency**: N/A
History: 04/28/2023 – Nilufar Masimova	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 21	**Requirement Type**: Non-functional
Event: Easy user interface	**PUC #**: PUC Deliverable #1

Description of requirement: The product shall have a loading time shorter than 2 seconds.	
Rationale for requirement: Customers should be easily able to browse and check bookings.	
Fit criteria: Customers must be able to change the app interface with a loading time shorter than 2 seconds.	
Priority Rating: 7.3	Dependency: N/A
History: 04/28/2023 - Shreya	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Requirement #: 22	Requirement Type: Non-functional
Event: Payment confirmation with banks	PUC #: PUC Deliverable #1
Description of requirement: The product shall verify with the banks in the backend whether we received the money once the payment has been made by the customer.	
Rationale for requirement: It can ensure the fair practice of trade between customers and service providers.	
Fit criteria: The banks should confirm that the details entered by the customer are correct, and the payment has been received in the account of TravelNow product.	
Priority Rating: 6.3	Dependency: N/A
History: 04/29/2023 - Aabhas	
Supporting Materials: Context Diagram, PUCs, Living Glossary	

Prioritized Non-functional Requirements

The following table shows the prioritization of non-functional requirements. We again used the Volere model to prioritize non-functional requirements. By identifying and prioritizing the non-functional requirements based on their importance and impact on the system's performance, security, and usability, we can ensure that the system meets the highest standards of quality and reliability. By prioritizing the non-functional requirements, we can ensure that the system's critical qualities are delivered first, providing a solid foundation for the system's functional capabilities and delivering value to the users and stakeholders.

Requirement	Number	Factor - score out of 10	%Weight applied	Factor - score out of 10	%Weight applied	Factor - score out of 10	%Weight applied	Factor - score out of 10	%Weight applied		Total Weight
		Value to Customer	40	Value to Business	20	Minimize Implementation Cost	10	Ease of Implementation	30	Priority Rating	100
Requirement 17	17	2	0.8	8	1.6	3	0.3	5	1.5	4.2	
Requirement 18	18	3	1.2	8	1.6	2	0.2	4	1.2	4.2	
Requirement 19	19	3	1.2	8	1.6	2	0.2	3	0.9	3.9	
Requirement 20	20	8	3.2	7	1.4	3	0.3	2	0.6	5.5	
Requirement 21	21	9	3.6	8	1.6	6	0.6	5	1.5	7.3	
Requirement 22	22	7	2.8	9	1.8	5	0.5	4	1.2	6.3	

TravelNow Prototype

The following link provides you with access to the TravelNow mobile app prototype. The prototype showcases the app's key features, including the ability to search for flights and lodgings and can make reservations directly within the app. As an initial step, we provided functionalities such as a home page, registration, profile information, flight searches, flight booking, payment, and online boarding pass process. As the lodging will follow almost the same logic, we did not include it in our prototype. However, we understand there is a need to have lodging as well. The prototype also provides a valuable chance to gather feedback and insights into user needs and preferences, allowing for continuous refinement and optimization of the app's functionality and design. By leveraging the prototype, we can accelerate the development and deployment of the app, delivering a quality product that meets the needs of its users and stakeholders and drives business growth and success.


TravelNow App Prototype (Link):
https://www.figma.com/proto/yhEM8kPZoVLKDiBLSwb0KO/TravelNow-Prototype?type=design&node-id=92-137&scaling=scale-down&page-id=20%3A165&starting-point-node-id=92%3A137

The followings are a brief process and a guiding picture to help us understand how to use the prototype effectively (9 app interfaces in total):

Tap anywhere (Homepage) -> "Register" button -> "Update" button -> "Flight" button -> "Search Flights" button -> Click the first flight ticket -> "Continue" button -> "Continue" button -> "Boarding Pass" page.
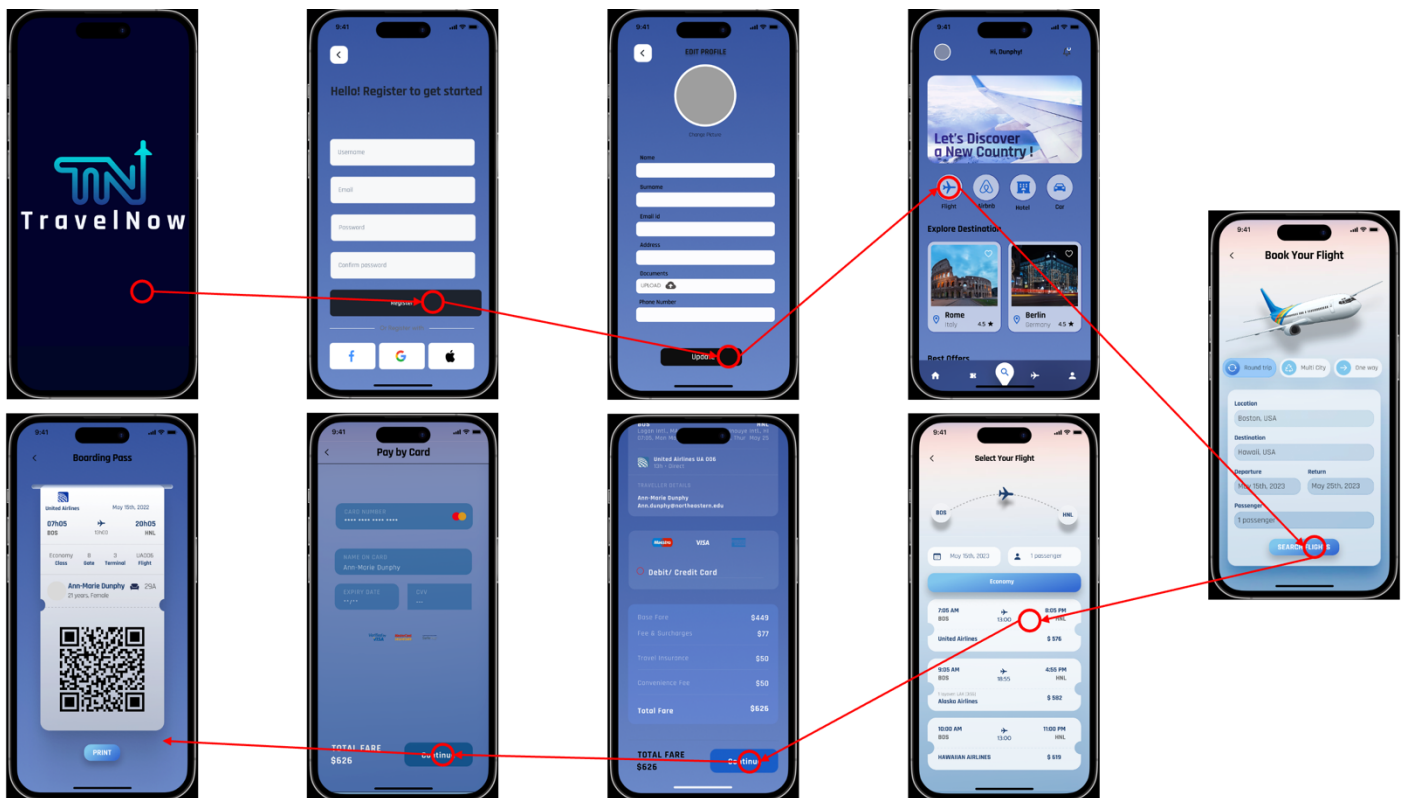
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Glossary

     The following glossary is a comprehensive table that provides a clear and concise definition of the key terms, concepts, and acronyms used in the project. The glossary serves as a valuable reference tool for all project stakeholders, ensuring that everyone involved in the project has a common understanding of the project's terminology. By creating and maintaining a glossary, we can avoid misunderstandings and miscommunications, which can lead to project delays and errors.

Terminology	Clarity/Meaning/Definition
#	Number
Accommodation	Available rooms of Airbnb/Hotels.
Actors	Participants in our Product use cases.
Airbnb	It's a platform where people post their properties for rental stays.
Airline Companies	Showing the different airlines that are operating for the locations selected, including United Airlines, Delta Airlines, JetBlue, Spirit, Frontier, American Airlines, Alaska Airlines, Hawaiian Airlines, and some international airlines (if possible, in the future).
BA	Business Analyst: Analyzing data to form business insights and recommend changes in business based on market trends.
Backend	The part of the product that handles data processing, storage, and management tasks, as well as user authentication and authorization, and other tasks not visible to customers.
Baggage Information	Baggage dimension, number of bags, and bag weight that an individual can carry.
Base Fare	The price of a ticket without any extra taxes or fees.
Best Offers	Most cost-effective and affordable options according to the customer's preferences.
Boarding and Lodging	An area/place where customers can stay temporarily.
Boarding Pass	A pass that is given to a passenger to board the flight when a ticket has been issued to them.
Booking Confirmation	Sending emails or text messages confirming the booking.
Booking Options	Filter to select different services.
Booking Request	Reservation made by the customer.
BOS	The code for the airport. Boston Logan International Airport.
BUCs	Business Use Cases: Describe how the system will help the company achieve specific goals.
Competitors	Companies operating in the same market, such as platforms used by customers to search for and order flight tickets and accommodations.
Compliance Documents	Information regarding the documents required to travel.
Compliance Report	It demonstrates that the company adheres to industry-standard rules and regulations the law requires.
Context Diagram	A visual representation that can show the system being analyzed, its external entities, and the data flow between them.
Convenience Fee	The fee charged by a company when a user makes a payment.

CPO	Chief Product Officer.
Customer Service Request	If the customer wants to make changes or get some information regarding the booking.
Customers	End users - these are the people who will use the product, including individuals, businesses, families, and travel agents.
CVV	Card Verification Value. A 3-digit card verification code which is mainly on the back credit/debit card for security purposes.
Dependency	Other requirements that have some dependency on this one.
Developers	Developing the product from scratch.
Economy Class	Standard main cabin for the majority of passengers to sit (Generally, the economy class has the cheapest fares).
E-tickets	Getting flight tickets by email.
Event	A significant occurrence within an organization that triggers a business activity.
Explore Destination	Learn about new places.
FAA	Federal Aviation Administration
Filter	A feature that allows customers to refine their search results based on specific criteria.
Fit criteria	The measurement that a solution must meet to be considered acceptable for the business.
Flight Deals	Customized promotions based on travel locations.
Flight Restrictions	Information regarding what passengers can carry and airline rules.
Flight Schedules	Showcasing different timing of the flight for the locations selected.
Flight(s)	One-way flight ticket from one city to another destination.
Fraud Prevention	Make sure there is a secure pipeline for the payments and customer information.
Functional Requirement	A specific feature that the website must perform to meet user needs or business requirements.
Group Package Rates	If customers are booking for a party or in large numbers.
History	Who created it? When was it created?
HNL	The code for the airport. Honolulu International Airport.
Hotel Booking	Options to book hotel stays based on the location customers are traveling to.
Hotel Vacancies	Different available types of rooms.
Hotels	Temporary places to stay, including all the hotel brands.
International Travel Option	If customers want to travel outside the country of their permanent residence.
Itinerary	A planned route or journey.
License and Permit	Information regarding the license and permits required to travel (Such as a negative covid report).
Lodging preference information	Preferred Airbnb/hotel brands, location, room type, amenities, and other factors that may impact customers' stay.
Multi City	A journey where we can halt at multiple cities/countries. E.g., Boston to Dallas and return from Austin to Boston, the travel between Dallas and Austin will be arranged by the customers by their own means.
N/A	Not Applicable
Non-functional Requirement	How the website should perform (e.g., speed, security).

One Way	A journey only in 1 direction. E.g., Boston to New York.
Passenger Information	It involves information such as passport number, age, sex, address, etc.
Payment Information	Debit/Credit card information and the address at which the customer wants the booking confirmation to be made.
Payment Validation	Ensuring payment is correct before transmitting to the customer's bank.
Payment Verification	Generation of receipt.
PM	Project Manager: Ensuring planning and execution of the project.
Price and Availability	Displaying the prices of different airlines and the number of seats available for selected locations.
Product	TravelNow Website
Program Manager	The person who oversees the fulfillment of larger organizational goals.
PUCs	Product Use Cases: How a user will use the product to achieve a goal or complete a task.
Regulatory Bodies	A group of people who can ensure everything is functioning ethically and there is no security breach.
Requirement Type	Including functional and non-functional requirements
Round Trip	A journey to one place and back again. E.g., Boston to New York and New York to Boston.
Sponsor	Christo Reynolds: The person who provides money to TravelNow product.
Stakeholder Onion Map	A visual representation that can show the different levels of stakeholders involved in the project, from broad to specific.
Surcharge	An additional charge for a service.
Terminal	A building in an airport where passengers transfer between flights or board flights at a given location.
Testers	Ensuring that the product is meeting the desired results.
Ticket preference information	Preferred airlines, seating options, departure times, meal preferences, and other factors that may impact customers' travel experience.
Total Amount Outstanding	The total amount of money owed by a customer to a lender at a given point in time.
Total Fare	A sum of base fare, surcharge, tax, insurance, and convenience fee.
Travel Discounts	Discounts on Airbnb/hotels and flights.
Travel Documents	Passports, visas, travel permits, identity cards, and any related documents.
Travel Insurance	A financial protection scheme for travelers in case they face any problems when traveling. E.g., lost luggage or accident.
Traveler	A person who travels from one place to another.
User Information	Information such as name, passport number, etc.
User-friendly	A design that is easy to use, understand, and navigate for the intended users.
Vacancies	Shows the number of rooms available.

Responses to the Emails from TravelNow Staff

Response to Alex (CPO)

From: Diversity Consulting <b.analyst@diversityconsulting.com>
To: Hoen, Alex <a.hoen@travelnow.com>
Cc: Patel, Harisha <h.patel@travelnow.com>, Wang, Max <m.wang@travelnow.org>
Subject: RE: Weekend Brainstorm

Dear Alex,

Thank you for sharing your thoughts and ideas for the product development. It sounds like a great opportunity for TravelNow to expand its services and offer customers more convenient ways to book flights and lodging.

Regarding the requirements for integrating the product with Alexa and Google Home, we would like to mention the importance of studying and determining the technical feasibility, cost, and effort of implementing these features. Also, we must ensure that the integration meets the privacy and security requirements. You can also refer to the given non-functional requirements document for more comprehensive information.

In terms of the data-sharing agreement with Amazon, we need to identify the risks and benefits of sharing data and ensure that we comply with the data protection regulations. Additionally, integrating with this system requires a complex integration process, even if it's an adjacent system. We need to make sure that our product can be integrated seamlessly.

Therefore, we would like to involve Max Wang (Partnership Manager) also in this process, as she has experience in developing data-sharing agreements with airlines and hotel companies.

Finally, we think that we need to address several strategic questions to ensure that our efforts align with our business goals and provide value to our stakeholders. We should analyze how it will affect our investors, our long-term business goals, and our Corporate Social Responsibility (CSR) initiatives.

As we move forward with these ideas, we recommend that we can set up a meeting with the program manager, partnership manager, and development and legal teams to discuss the above-mentioned factors.

Thank you very much.

Best Regards,
Diversity Consulting

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Response to Christo (Investor)

From: Diversity Consulting <b.analyst@diversityconsulting.com>
To: Reynolds, Christo <c.reynolds@travelnow.com>
Subject: RE: Competitive Landscape

Dear Christo,

Thank you for reaching out to us. We appreciate your interest in hearing our input.

Regarding your question on competition, there are several companies in the travel industry that could be considered competitors of TravelNow. Based on our analysis, some of the top competitors are **Expedia, Booking.com,** and **TripAdvisor**. However, depending on our specific area of focus, other companies may be more relevant.

Expedia is a leading online travel agency that provides customers with a wide range of travel options, including flights, hotels, car rentals, cruises, and vacation packages. The company has a strong presence in North America and Europe and has expanded its operations globally through strategic acquisitions and partnerships (MarketLine, 2022).

Booking.com is another major player in the online travel industry, with a focus on hotel reservations. The company has a strong market position in Europe and has expanded its reach to other parts of the world, particularly in Asia (MarketLine, 2022).

Tripadvisor.com is a popular travel review website that provides information and advice to travelers on destinations, hotels, and activities. The site has a large user base and a strong reputation for providing reliable and unbiased reviews. In recent years, the company has also expanded its offerings to include booking capabilities and travel planning tools (MarketLine,2022).

Regarding the framework for analyzing competition, we recommend a combination of Porter's Five Forces model and the Ansoff Matrix. Porter's Five Forces model helps to analyze the competitive environment (Dobbs, 2014), while the Ansoff Matrix helps to understand market growth potential and market penetration strategies (Loredana, 2016).

We would be happy to schedule a call to discuss this further and provide you with more details. Additionally, we provide you with illustrative materials for Porter's Five Forces and Ansoff Matrix analysis in the attachments, which could be helpful for facilitating group discussion.
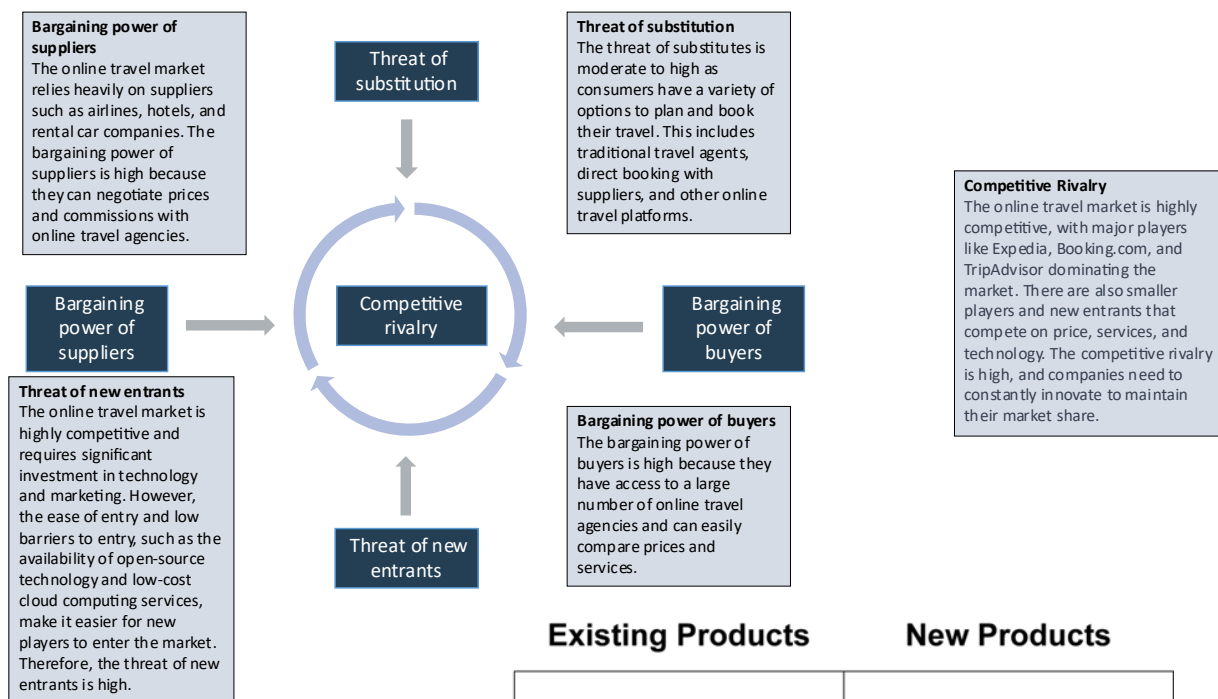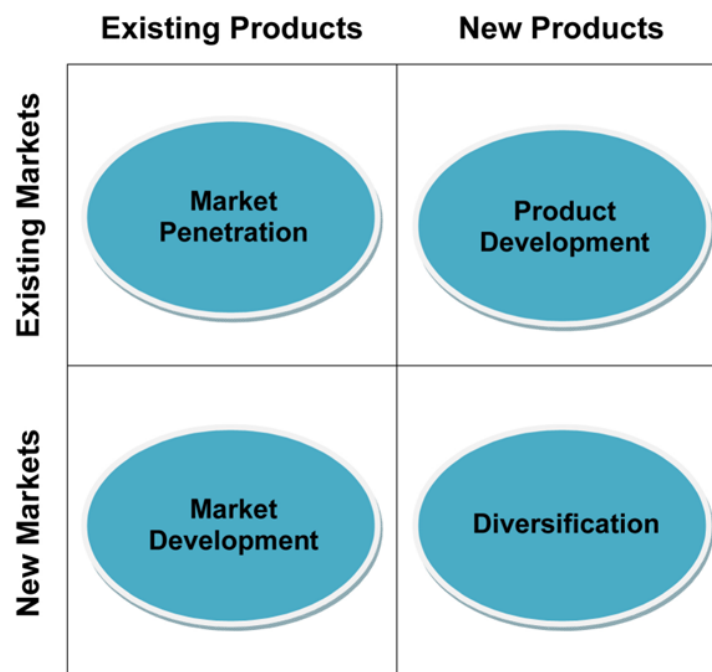
Thank you very much.

Best Regards,
Diversity Consulting

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Loredana, E. M. (2016). The use of Ansoff matrix in the field of business. In *MATEC Web of Conferences* (Vol. 44, p. 01006).

MarketLine. (2022). *"Booking Holdings Inc. - Strategy, SWOT and Corporate Finance Report."*

MarketLine. (2022). *"Expedia Group, Inc. - Strategy, SWOT and Corporate Finance Report."*

MarketLine. (2022). *"TripAdvisor, Inc. - Strategy, SWOT and Corporate Finance Report."*

Attachments to the response email to the investor:

Porter's 5 Forces analysis for online travel industry

Bargaining power of suppliers
The online travel market relies heavily on suppliers such as airlines, hotels, and rental car companies. The bargaining power of suppliers is high because they can negotiate prices and commissions with online travel agencies.

Threat of substitution
The threat of substitutes is moderate to high as consumers have a variety of options to plan and book their travel. This includes traditional travel agents, direct booking with suppliers, and other online travel platforms.

Competitive Rivalry
The online travel market is highly competitive, with major players like Expedia, Booking.com, and TripAdvisor dominating the market. There are also smaller players and new entrants that compete on price, services, and technology. The competitive rivalry is high, and companies need to constantly innovate to maintain their market share.

Threat of new entrants
The online travel market is highly competitive and requires significant investment in technology and marketing. However, the ease of entry and low barriers to entry, such as the availability of open-source technology and low-cost cloud computing services, make it easier for new players to enter the market. Therefore, the threat of new entrants is high.

Bargaining power of buyers
The bargaining power of buyers is high because they have access to a large number of online travel agencies and can easily compare prices and services.

Ansoff Matrix

Response to Harisha (Program Manager)

From: Diversity Consulting <b.analyst@diversityconsulting.com>
To: Patel, Harisha <h.patel@travelnow.org>
Cc: Wang, Max <m.wang@travelnow.org>
Subject: RE: Customer Segments

Dear Harisha,

Thank you for inquiring about our insight on this issue. Yes, Max shared that you have identified and categorized three segments of the customers for TravelNow such as the adventurer, the bargainer, and the emergency traveler.

First, we want to acknowledge that the brainstorming exercise was comprehensive and well done. However, we believe there is an additional customer segment that could be added to the list, which is the Business Traveler. This is a very important segment for TravelNow as they tend to spend more and are likely to book with the same provider repeatedly.

In terms of prioritizing the customer segments, we recommend using a multi-criteria analysis that can take into account factors such as profitability, size of the segment, ease of market entry, or any criteria which is important for us (Dean, 2020). This method will help you determine which segments to focus on first.

Additionally, Volere Prioritization Matrix can also be used. This method combines four factors for prioritization – value to customers, value to the business, implementation cost, and ease of implementation (Robertson & Robertson, 2000).

Based on this method, we would advise you to prioritize the Bargain Traveler and the Business Traveler segments. The Bargain Traveler is a large segment with a high potential for profitability, and TravelNow can differentiate itself by offering competitive prices and attractive deals. The Business Traveler segment is also profitable and loyal, and TravelNow can differentiate itself by offering a seamless and efficient booking experience.

We will be using the Volere Prioritization matrix to prioritize the requirements, which is a useful tool for prioritizing requirements based on their importance and feasibility. The requirements will be then ranked based on their priority scores, with the highest priority requirements being addressed first.

Thank you very much.

Best Regards,
Diversity Consulting

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