Project Title : COMPETITIVE ANALYSIS OF LEADING TRAVEL AGGREGATORS

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Team ID : NM2023TMID00901

Team Size : 4

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1.INTRODUCTION

1.1 Project Overview

Tourism has been a major social phenomenon in societies all over the world. It is driven by the human desire for new experiences, and the desire to be educated and entertained. The spread of education and the technological improvements in communication have strengthened the basic human thirst for new knowledge and experience and have fostered a desire to know more about different parts of the world. Tourism has been revolutionised with the emergence of tourism aggregators, i.e. web-based portals that provide travellers with services such as travel, accommodation, and tour planning and booking. The tourism aggregators have reduced information search costs, and have increased the awareness of tourists of potential destinations. This has enabled some innovative trends in tourism, including eco-tourism, adventure tourism, heritage tourism, medical tourism, pilgrimage tourism, and so on. The objective of the study is to compare the competitiveness of Indian tourism aggregators using the Analytic Hierarchy Process (AHP). AHP is a technique that is used to structure multi-criteria decisions, allowing both quantitative and qualitative comparisons between alternatives (Saaty and Forman, 1992; Saaty, 2008). The criteria used for the study include price, process, ease of access, and customer service. The tourism aggregators selected for the study include Yatra, Makemytrip, Goibibo, Cleartrip, Expedia, and Kuoni-SOTC.

1.2 Purpose

The purpose of the " COMPETITIVE ANALYSIS OF LEADING TRAVEL AGGREGATORS " project is to address the economic contribution of travel and tourism over their spending.
In the twenty-first century, tourism has emerged as a strong economic force for development. According to the 2015- 16 report of Ministry of Tourism, Govt. of India, ‘Tourism is accepted as the potent engine for inclusive social economic progress at universal level through its forward and backward linkages and ability to create employment in the economy.’

Tourism has direct role in employment generation and poverty eradication sustainably for all segments of society. . The objective of the study is to compare the competitiveness of Indian tourism aggregators using the Analytic Hierarchy Process (AHP).

2. Ideation and Proposed Solution

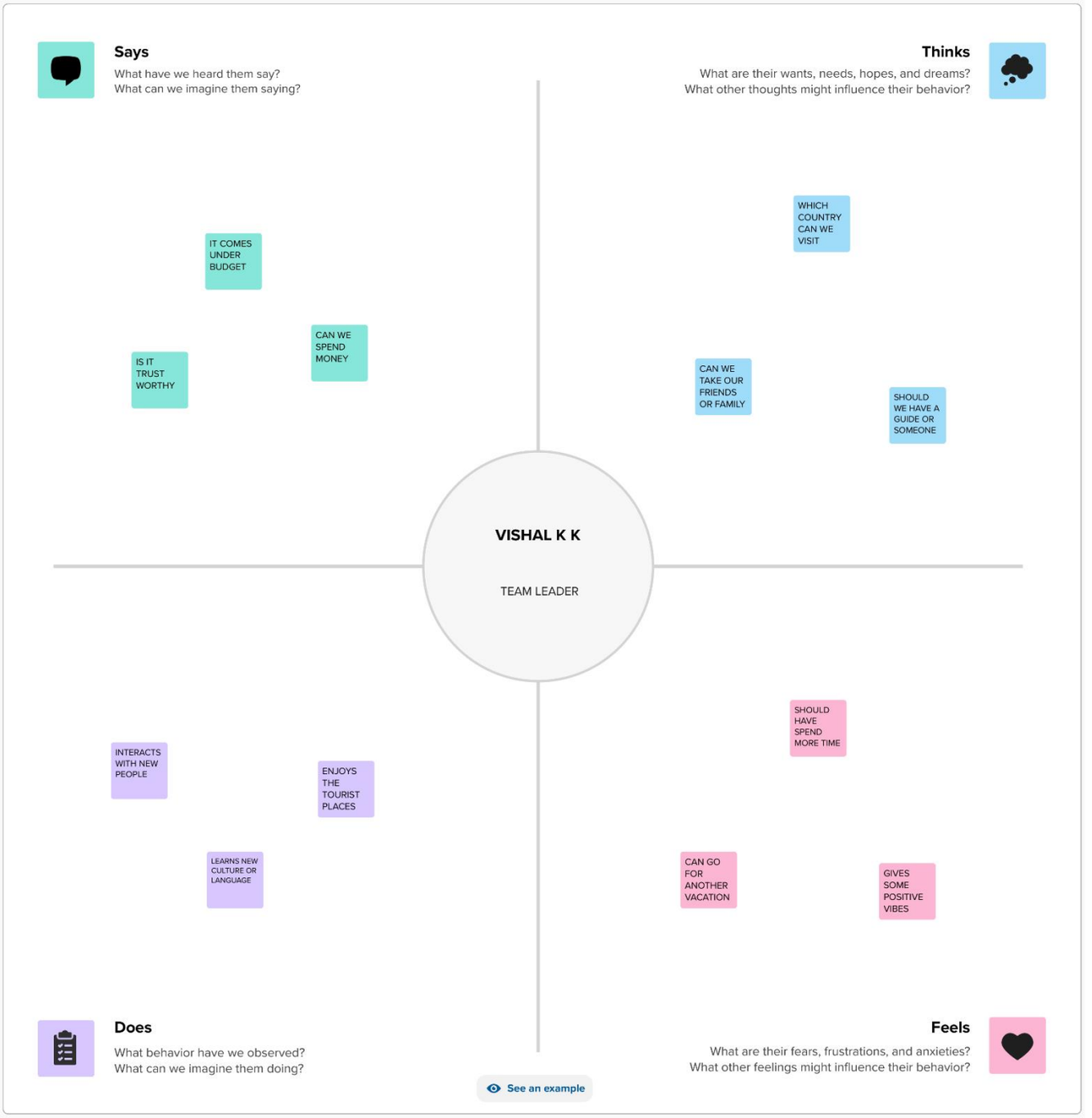
2.1 Problem statement definition

Tourism is service dominant product and it’s a fragmented industry consisting of many small-sized service providers such as restaurants and lodging facilities as bed and breakfast establishment and tour operators (Wertner & Klein, 1999). Tourism is an intangible and experiential good; that is, a sample test or prior assessment of standard is extremely difficult without actual experience of real purchase.

This gives rise to the high risk involved in decision making (Roehl & Fesenmaier, 1992), leading to extensive search for information. Second, travel decision making involves a complex and multi-faceted decision process that is influenced by numerous kinds of constraints (Jeng & Fesenmaier, 2002).

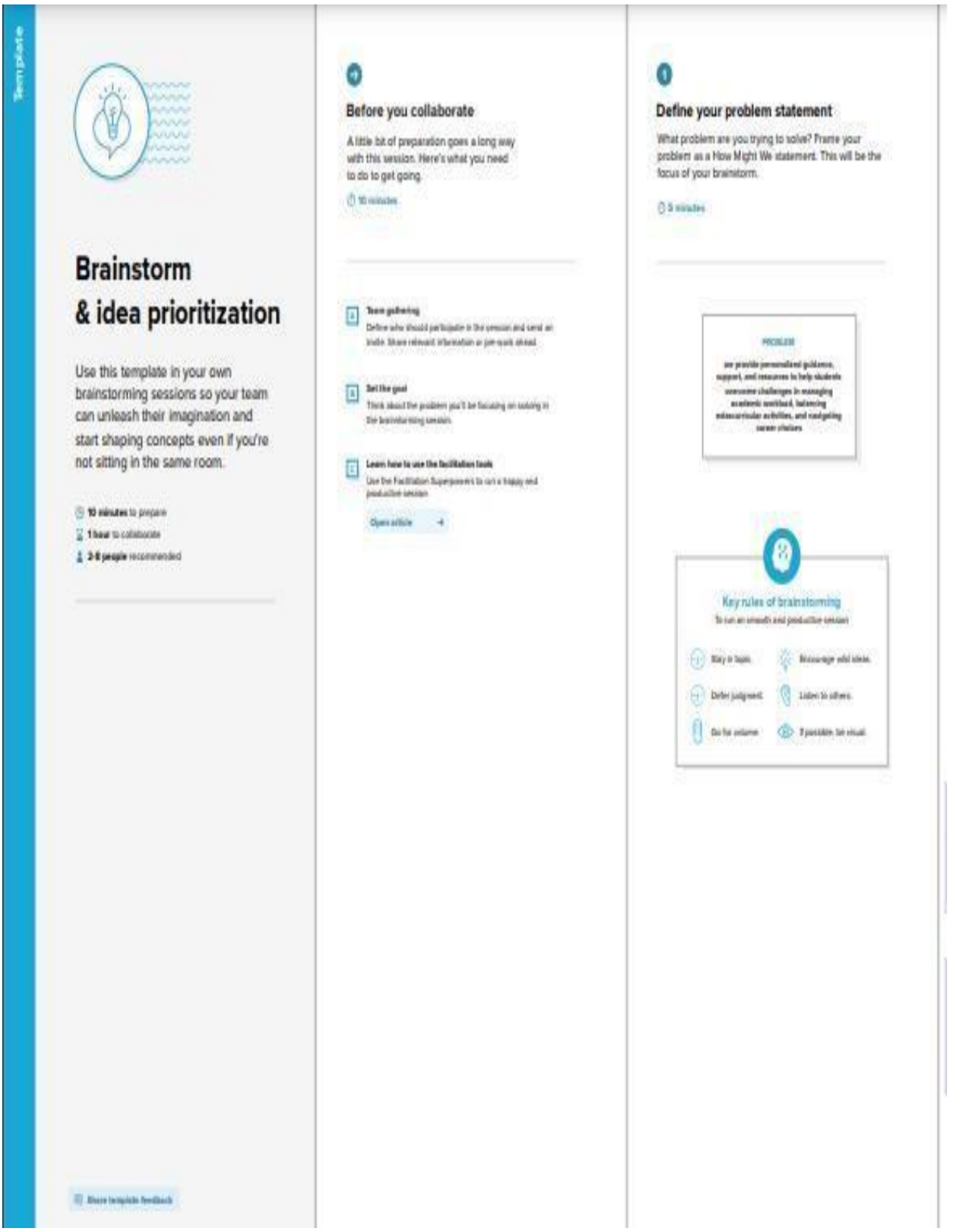
Thirdly, travel decisions are highly-context driven and individual-based (Gretzel, Hwang, & Fesenmaier, 2006). The critical success points in aggregators business are Price, Product, Convenience, and Customer Service. Smith states that availability of free information does not ensure that customers will use it; this will depend on reliability of and trust in the supplier.

2.2 Empathy map canvas



2.3 Ideation and Brainstorming

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



Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

VISHAL

- Collect the dataset
- Understand the data
- Cost Estimation
- price comparison from one trip to another
- Customer reviews collection

SIVA PRASATH

- Customer other Requirements
- requirements for the traveller
- Quality Control and Testing
- Set the task
- Readings the data

ANTONY VEPSTER

- Reputation Management
- Financial Viability
- Technological Dependencies
- Removed unused columns

BARATH MANIKANDAN

- Internal Capacity
- Prioritize tasks
- Compliance Requirements
- Communication with the customer
- Dependencies

Step-3: Idea Prioritization

4

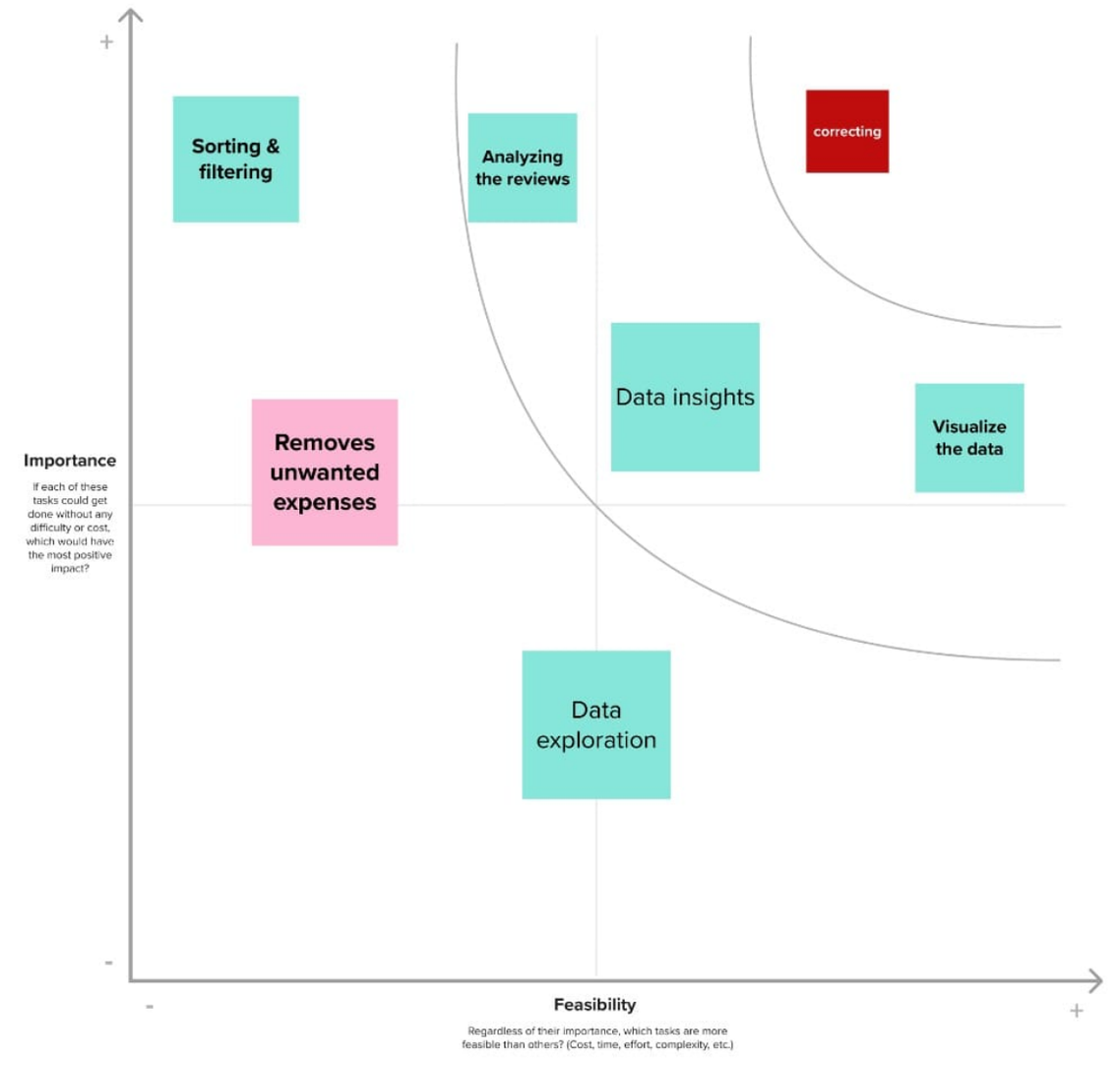
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.



2.4 Proposed solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to besolved)	The problem to be solved is the inclusive social economic progress at universal level through itsforward and backward linkages and ability to create employment in the economy. ' Tourism has direct role in employment generation and poverty eradication sustainably for all segmentsof society'. The Government of India seems oriented in this direction.
2.	Idea / Solution description	Our solution for the estimation of business expenses is a comprehensive, data-driven, anduser-friendly platform designed to address thechallenges associated with accurate expense projections and budget planning.
3.	Accommodation and Catering	The growth in hotels and restaurants segmentwas estimated at 21.5% during 2015/16. Also, hotel and tourism ranked as one of the top ten sectors to attract the highest FDI, contributing 3% of the total inflow. Further, theintroduction of GST (Goods and Services Tax) will improve the growth factor by decent pointsas it will replace the indirect taxes on all goods and services.
4.	Travel Agents and Tour Operators	They are one of the main parties in tourism business. Travel agents mainly work on fees forarranging tourism products for customers. Tours operators means any person engaged in the business of planning, scheduling, organisingor arranging tours (which may include arrangements for accommodation, sightseeing or other similar services) by any mode of transport, and includes any person engaged in the business of operating tours in a tourist vehicle or a contract carriage .
5.	Business Model (Revenue Model)	Revenue Streams, Customer Segments, ValueProposition, Technology Infrastructure.

3.REQUIREMENT ANALYSIS

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The user interface should be easy to navigate, with intuitive design and clear instructions, ensuring users can effectively use the tool without confusion.

NFR-2	**Security**	The tool must safeguard user data and personal information, ensuring that it remains confidential and protected from unauthorized access.
NFR-3	**Reliability**	The system must operate consistently without frequent outages, ensuring that users can rely on it for critical tasks.
NFR-4	**Performance**	The system should respond quickly to user interactions, ensuring that users can access data and features without significant delays.
NFR-5	**Availability**	The system should regularly backup user data, and in the event of data loss or system failure, it must have mechanisms in place to recover the data.
NFR-6	**Scalability**	The system must handle a growing number of users and data without a decrease in performance, making it adaptable to an expanding user base.

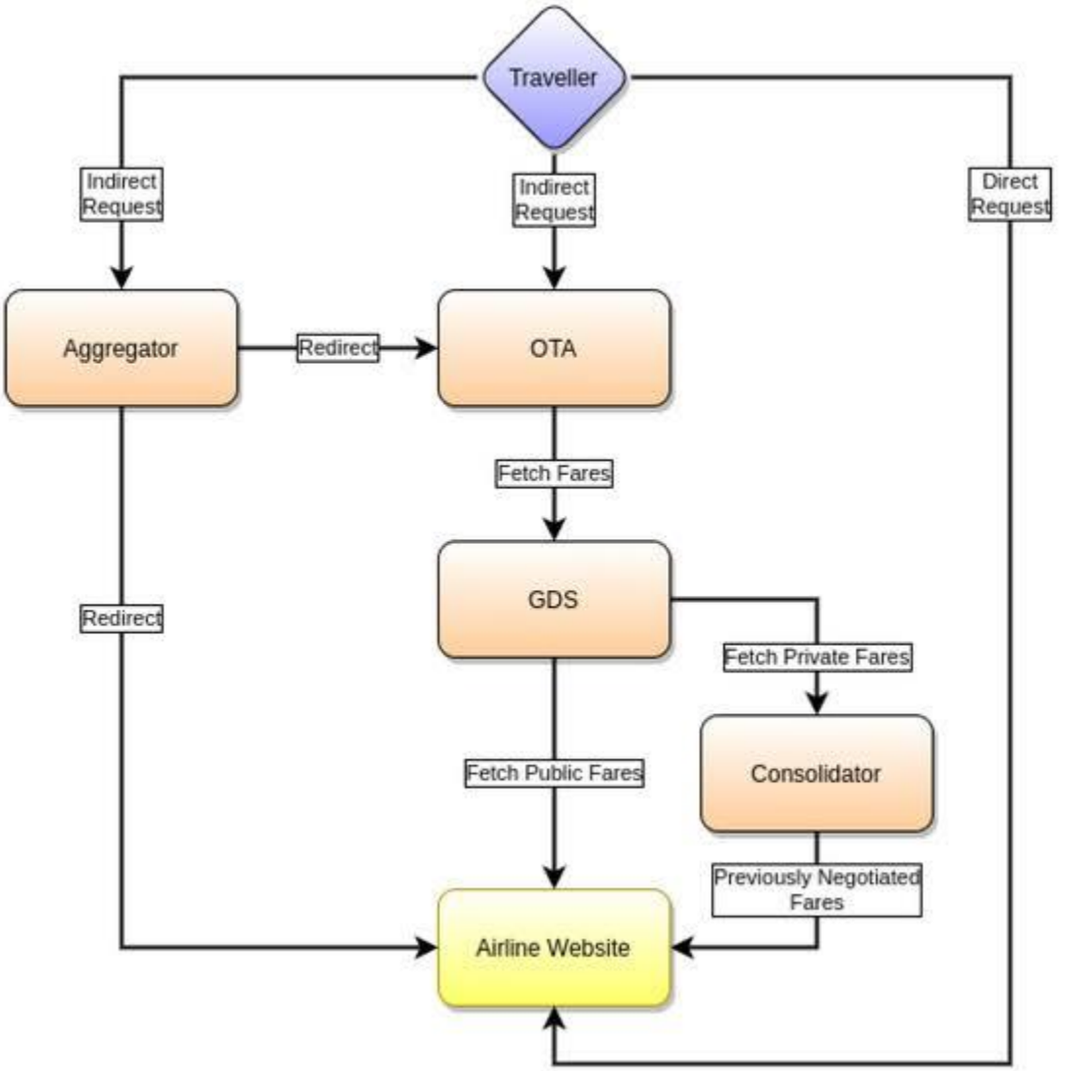
3.2 Non-functional Requirement

FR No.	**Functional Requirement (Epic)**	**Sub Requirement (Story / Sub-Task)**
FR-1	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Profile completion	Travelling or studies
FR-4	profile Integration	Connect existing business profile to my account

4. PROJECT DESIGN

4.1 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



4.2 Solution and Technical Architecture

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

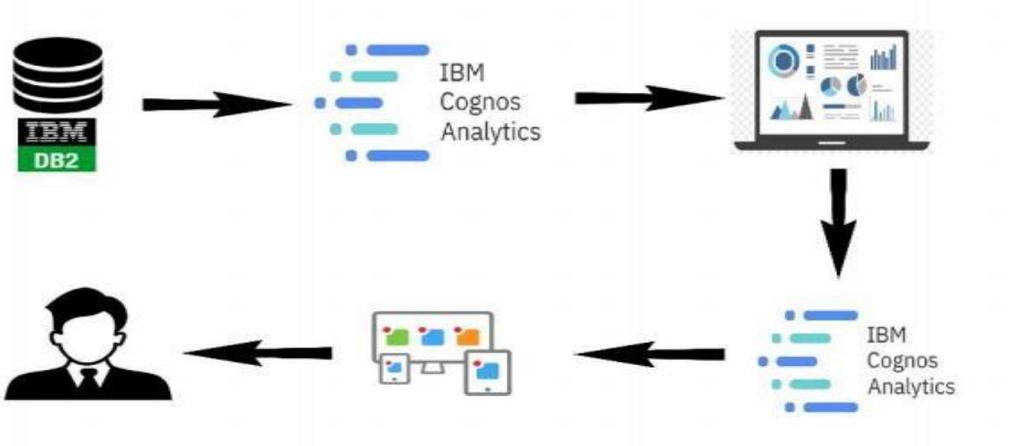


Table-1 : Components & Technologies:

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	Java / 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, NoSQL, 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.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used

4.2 User Stories

User Type	Functional Requirement (Epic)	User Story / Task	Team Member
Customer (Mobile user)	Registration	As a user, I can register for the application byentering my email, password, and confirming my password.	VISHAL
	Possibilitieschecking	As a user, I will receive confirmation emailonce I have registered for the application thought the customer reviews	SIVA PRASATH
	Data cleansing	As a user, I can pickup the collections fromany data servers	SIVA PRASATH
	Accessibility	As a user, I can register for the applicationthrough Gmail	ANTONY VEPSTER
	Login	As a user, I can log into the application byentering email & password	BARATH MANIKANDAN
Customer (Web user)	Web or app	As a user I can select which country I want totravel or study from the website or app	ANTONY VEPSTER
Customer Care Executive	Suggestion box	As an user I must provide the experiencesthat I had with this trip	VISHAL
Administrator	SERVER	As an administrator I must note down the negativness from the customer's experience	VISHAL

5. METHODOLOGY

The analytic hierarchy process (AHP) is a technique that is used to structure multi-criteria decisions, allowing both quantitative and qualitative comparisons between global phenomenon in the age of technology. According to Rayport and Sviokla (2000), the intangible nature of the services makes technology-arbitrated models readily accepted in services. 'Online travel agents provide a point of contact for customers through World Wide Webto facilitate customers in searching for appropriate travelplanning, which is then booked and ticketed by the onlinetravel agents'. Travellers today look for

interactive, quality, fast and anytime accessible tourism services from aggregators. Global travel industry has added technologyas an essential tourism element.

The customer service factor focuses on the quality of service support offered by the tourism aggregatorsto their customers. This is assumed to be reflected in customer satisfaction as well as customer complaints.To assess this factor, the customer reviews, complaints, and ratings recorded on the consumer feedback website www.mouthshut.com were collected and compared for the tourism aggregators.

6. RESULTS

6.1 Performance Metrices

Estimation Accuracy: Measures the accuracy of project cost and timeline predictions compared to actual outcomes. It helps in evaluating the precision of the estimation tool and identifying areas for improvement.

Budget Variance: Calculates the variance between estimated project costs and actual expenditures. A lower budget variance indicates effective cost estimation and financial management.

Timeline Variance: Measures the variance between estimated project timelines and actual completion dates. Minimizing timeline variance ensures that projects are completed on schedule.

Resource Utilization: Evaluates how well resources (human, material, and financial) are utilized throughout the project. Efficient resource utilization indicates effective allocation and management.

7. ADVANTAGES AND DISADVANTAGES

Advantages

- Data-Driven Decision Making
- Improved Placement Success
- Personalized Guidance
- Efficiency and Automation
- Enhanced Transportation

Disadvantages

- Data privacy concerns
- Initial Implementation Cost

- Integration Complexity
- User Adoption
- Maintanence and Updates

8. CONCLUSION

Tourism has been revolutionised with the emergence of tourism aggregators, i.e. web-based portals that provide travellers with services such as travel, accommodation, and tour planning and booking. The tourism aggregators have reduced information search costs, and have increased the awareness of tourists of potential destinations.

Yatra was found to be the industry leader among tourism aggregators. It was dominant in the industry in terms of customer service and product, however, it lagged behind in terms of convenience and price. It would need to improve its pricing and web traffic in order to strengthen its position in the industry.

The market challenger is Makemytrip, which dominates over Yatra in terms of convenience. It has better marketing and promotional strategies, giving it higher visibility on the internet.

There are several limitations inherent in the study. The study considered only certain criteria, but these may not be sufficient to capture all aspects of tourism aggregators. Further, each of the criteria have sub-criteria, and a direct pairwise comparison of the criteria may be misleading.

Also, pairwise comparison of the tourism aggregators under some criteria may be difficult due to contradictory assessments under the sub-criteria. A hierarchical AHP approach may be more suitable in this context. Finally, the data was collected from the websites at a particular point in time; due to the nature of dynamic pricing, however, there could be random fluctuations in prices at the time of the sampling, so that the sample prices may be extreme values, not necessarily reflecting the true distribution of prices. To overcome this limitation, data would have to be resampled over a period of time.

9. MAJOR PLAYERS IN TOURISM INDUSTRY

9.1 Accommodation and Catering

Growing consistently since 1995/96 from just 120 hotels with about 18,000 branded/organized rooms to a record 887 hotels with a room count of 1,13,622 in 2015/16. The growth in hotels and restaurants segment was estimated at 21.5% during 2015/16. Also, hotel and tourism ranked as one of the top ten sectors to attract the highest FDI, contributing 3% of the total inflow. Further, the introduction of GST (Goods and Services Tax) will improve the growth factor by decent points as it will replace the indirect taxes on all goods and services.

Leisure travel is on rise, the WTT+S estimates that leisure travel spending (inbound and domestic) generated 83.2% of the direct travel and tourism GDP (Rs.5,045.5bn) in comparison to 16.8% from business travel spending. The market-wide occupancy was healthy at 63.4% in 2015/16. RevPAR (Revenue Per Available Room) was recorded at Rs.3,512 in 2015/16, a significant growth of 6.1% over the preceding fiscal. The existing room supply grew by 5.5% in 2015/16 totaling to 1,13,622 rooms (highest supply growth in Agra followed by Ahmedabad and New Delhi).

9.2 Transportation

During 2015/16, transport industry registered strong growth. In aviation sector India is now 3rd largest market in domestic air passenger traffic at 100 million in 2016, behind only US (719 million) and China

(436 million).

The Indian passenger vehicle industry has grown by 7.2% during FY2016, in line with ICRA's expectation of 7%-8% growth during the year. The domestic passenger vehicle sales has been supported by new model launches by incumbents as well as new entrants, discount push from OEMs and improved customer sentiments in the backdrop of recovery in the overall economy. The passenger car segment, which constitutes 73% of the domestic volume, grew by 7.9% followed by 6.3% in utility vehicles and 3.6% in the van segment

9.3Tourist Information Centres

The aim of tourist information centres is to find popular places of interest. With this, various tourism related information are also shared with interesting parties. Food, accommodation, attractions, packages, other support infrastructures are important information that information centres can share with tourists. There are public centres and private as well. Information centres fulfil key requirement of knowledge dissemination.

9.4Travel Agents and Tour Operators

They are one of the main parties in tourism business. Travel agents mainly work on fees for arranging tourism products for customers. Tours operators means any person engaged in the business of planning, scheduling, organising or arranging tours (which may include arrangements for accommodation, sightseeing or other similar services) by any mode of transport, and includes any person engaged in the business of operating tours in a tourist vehicle or a contract carriage by whatever name called, covered by a permit, other than a stage carriage permit, granted under the Motor Vehicles Act, 1988 (59 of 1988) or the rules made thereunder (CBEC, Department of Revenue, Ministry of Finance, Government of India).

9.5Online Travel Services

India's online travel segment constitute 41% of the overall Indian travel market (2014). The online travel market, estimated at US$ 9.1 billion (2014), comprised air travel (US$ 5.1 billion), rail (US$ 3.1 billion), hotels (US$ 0.8 billion), and others (US$ 0.1 billion). Online penetration in travel and tourism booking is expected to rise to 46% in 2017. Internet penetration in India is low at 17%. Key online travel agencies are Makemytrip (47%), Cleartrip (20%), Yatra.com (20%), and others (13%).

Online hotel segment in India is under-penetrated, with only 10% of hotels accepting bookings online, while the overall user-base of people seeking information on hotels online was very high. Online penetration of airline in travel segment stood at 52%, followed by rail travel at 43%, \hotel at 10%, and car rentals at 11%.

10. APPENDIX

These are some surveys taken from different apps that makes travelling much easier through all modes of transport.

Bangalore - New Delhi						
	Sept. 1 - 7	***Sept. 3 - 10***	***Sept. 5 - 12***	***Sept. 8 - 15***	***Sept. 12 - 20***	***Sept. 15 - 23***
Yatra	8077	8654	6836	5778	5669	5778
MakeMyTrip	8337	8185	6836	5778	5669	5778
GoIbibo	8327	9353	6826	5915	5732	5875
ClearTrip	8067	8654	6826	5778	5669	5778
Expedia	8067	8571	6826	6108	5732	6384
SOTC	7133	7133	6365	5800	3928	3948

	mean	std dev	coeff var	max
Yatra	6798.67	1299.03	19.11%	8654.00
MakeMyTrip	6763.83	1236.30	18.28%	8337.00
GoIbibo	7004.67	1508.53	21.54%	9353.00
ClearTrip	6795.33	1297.02	19.09%	8654.00
Expedia	6948.00	1131.68	16.29%	8571.00
SOTC	5717.83	1467.43	25.66%	7133.00

Bangalore - Bhubaneswar						
	Sept. 1 - 7	Sept. 3 - 10	Sept. 5 - 12	Sept. 8 - 15	Sept. 12 - 20	Sept. 15 - 23
Yatra	6289	6402	5586	5692	6189	8238
MakeMyTrip	6499	6399	5744	5324	6189	8238
GoIbibo	6289	6402	5692	6079	6189	8238
ClearTrip	6289	6402	5744	6499	6189	8238
Expedia	6424	6327	5752	5752	7348	8373
SOTC	6690	6802	5946	5946	4320	5079

	mean	std dev	coeff var	max
Yatra	6399.33	959.06	14.99%	8238.00
MakeMyTrip	6398.83	1002.06	15.66%	8238.00
GoIbibo	6481.50	894.38	13.80%	8238.00
ClearTrip	6560.17	862.71	13.15%	8238.00
Expedia	6662.67	1022.07	15.34%	8373.00
SOTC	5797.17	953.83	16.45%	6802.00

Bangalore - Kolkata						
	Sept. 1 - 7	Sept. 3 - 10	Sept. 5 - 12	Sept. 8 - 15	Sept. 12 - 20	Sept. 15 - 23
Yatra	7925	7707	5998	7007	5975	8141
MakeMyTrip	7925	7707	5998	7007	5998	8141
GoIbibo	9038	9522	8944	7055	7145	8493
ClearTrip	9039	7707	5998	7007	6863	8141
Expedia	7916	7707	5998	7055	6788	8944
SOTC	8668	10463	5978	5902	3961	6640

	mean	std dev	coeff var	max
Yatra	7125.50	960.99	13.49%	8141.00
MakeMyTrip	7129.33	955.52	13.40%	8141.00
GoIbibo	8366.17	1034.19	12.36%	9522.00
ClearTrip	7459.17	1069.31	14.34%	9039.00
Expedia	7401.33	1020.16	13.78%	8944.00
SOTC	6935.33	2296.29	33.11%	10463.00

Web Analytics Comparisons:

	total visitors	*average duration*	*pages per visit*	*rank*
Yatra	11.05	04:00	3.54	38
MakeMyTrip	37.59	04:46	4.38	16
GoIbibo	4.02	05:34	3.21	40
ClearTrip	17.79	03:26	4.06	30
Expedia	1.58	05:08	3.51	225
SOTC	0.23	02:27	2.23	3137
	ref: similarweb.com			

	daily unique visitors	*daily page views*	*daily income*	*web score*
Yatra	99901	184816	$ 179	61%
MakeMyTrip	207466	500362	$ 966	64%
GoIbibo	124563	230441	$ 222	51%
ClearTrip	88588	163887	$ 158	47%
Expedia	22127	40934	$ 26	24%
SOTC	8081	14949	$ 10	43%
	ref: freeseodoctor.com			

	site loading time	*score*
Yatra	8.43	70%
MakeMyTrip	4.21	84%
GoIbibo	4.97	80%
ClearTrip	3.23	81%
Expedia	7.56	69%
SOTC	84.24	57%
	ref: seositecheckup.com	

Customer Satisfaction Comparisons:

	justdial.com	*mouthshut.com*	*score*
Yatra	3.7	3.94	58%
MakeMyTrip	3.6	3.89	58%
GoIbibo	3.8	1.97	27%
ClearTrip	3.7	1.90	30%
Expedia	3.7	1.28	8%
SOTC	3.7	2.89	67%