

# Complex Problem Solving (How to Make Airline Sustainable)

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## Introduction

Aviation is the fastest growing industry, and it holds great promise for future growth. Pandemic has brought the aviation industry to its knees at a time when everything was going well. Because of the on-going pandemics, the aviation industry has been hit with the largest crisis in history. It was previously at a consistent peak. In 2020, the estimated losses are 84 billion dollars. in 2020 and is still counting. The project's sole goal is to make the airline economically sustainable, recover losses, and keep the entire airline on track so that the entire aviation industry can get back on its feet.

Generally Sustainability has three main pillars

- Social sustainability
- Economic sustainability
- Environmental sustainability

The Airlines are more concerned and should be more concerned about the Economic sustainability and the rest can be handled later. However, the cargo industry was profitable due to the transport of medical equipment, whereas the passenger economy is more important. Airlines should focus on their economic perspectives in order to recover from the crisis. So that the airline does not suffer financial losses or worse, goes bankrupt. The sad reality is that many planes have been grounded and will never fly again, 1.5 million people employed by various airlines have been laid off, and many have been placed on unpaid leave.

## Development

### Setting the Frame of the Problem

SCQ Sequence:

- **Situation:** The Pandemic has had a financial impact on airlines. Many planes are grounded and inoperable, resulting in a loss of revenue [1].
- **Complication:** The on-going pandemics and the need for a proper business model to recover losses and move forward economically.
- **Question:** How to make the Airlines sustainable? i. e., economically. (Figure 1 and 2).

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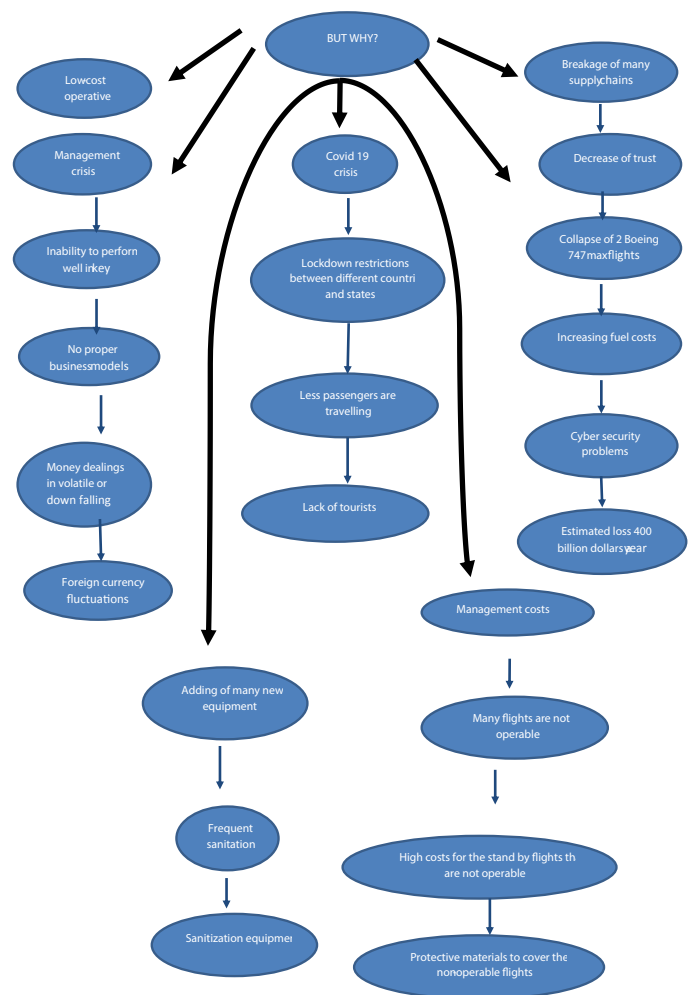


Figure 1. Diagnose the problem.

### T-shaped Problem solving

**Generalist:** In Generalist the problem solvers only think about the Corona pandemic is affecting the Airlines

**Strategic:** In case of Strategic problem solvers they think about the Maintenance costs, Business strategy, Dealings in volatile currency etc. [2]. So, the ideal problem solver is the association of both the Generalist and Strategic who not only thinks about one issue but thinks deep into the whole issues and come up with probable solutions. (Figure 3)

### Implementing the Solution

Selecting a solution depends upon many decision-making factors. The decision factors with the highest weighted score are implemented [3].

We are using weighted decision matrix for selecting a particular solution. (Table 1) The decision matrix gave us the important solution depends upon the preferences of the factors that are scaled between 1-5 (1 means less weighted



Figure 2. Identifying the solution: (Finding the how)?.

Table 1. How to make an Airline sustainable?.

Your weighted decision		75	50	83	61	58
Sources	Options	Adding more Aircrafts in traffic areas	Mergers and partnerships	New Business model	Use of more Turbo propeller aircrafts	Use of college maintenance shops
Decision making factors	weighting	your score	your score	your score	your score	your score
Cost	5	4	1	4	2	5
Man power	3	4	3	5	3	5
Technology	3	2	3	4	2	3
Passengers	5	5	3	4	4	1
Cargo	4	3	3	4	4	1

and 5 means more weighted)

The New Business model is the highest weighted factor so we will more concentrate on that and also on the second highest factor- Adding more aircrafts in traffic areas.

So, our implementation of solution is the Mix of both the first and second high weighted solutions.

## Charter

Why is the project necessary?

S-Specific, M-Measurable, A-Achievable, R-Realistic, T-Time bound (SMART)

Objective 1: To increase the number of passengers

Objective 2: To have a great business model

Objective 3: To decrease maintenance costs.

Deliverables

1. Check the high demand areas & increase number of fleets.
2. New business model e. g. slot method of booking tickets [4].
3. To collaborate with colleges and use their maintenance shop. (Tables 2 and 3)

Work packages: Mainly depends on 4 parts [5].

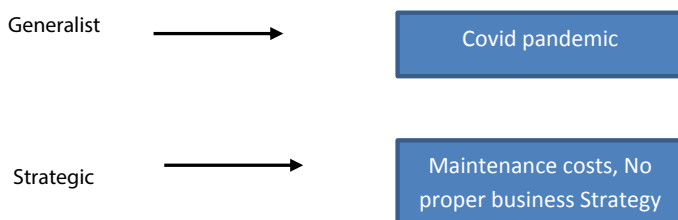
- Project
- Deliverable

**Table 2.** Budget amount.

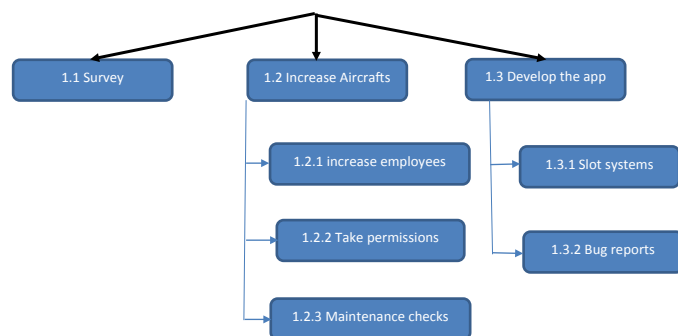
Activity	Amount
1. check the high demand areas & increase number of fleets	23 million \$
2. new business model e.g. adding slot method of booking tickets	1 million \$
3. to collaborate with colleges and use their maintenance shop	17 million \$
<b>Total allocated budget</b>	<b>41 million \$</b>

**Table 3.** Project stakeholders.

Number	stakeholder	Extent of interest	Degree of influence	Interest & expectations	Chances and dangers	Possible measures	status
1	Passengers	5	5	Low costs	-	Covid-19 measures	Active
2	Employees	9	3	More salaries (bonus)	+	Safety rules	Active
3	CEO of Airlines	10	10	company growth	+	Budget	Active
4	Managers	9	8	sustainability	+	Workload	Active
5	Other airlines	3	5	downfall	-	Opportunities to take business profits (our business)	active



**Figure 3.** Generalist + Strategic is the ideal problem solver.



**Figure 4.** Survey on work packages.

- Sub deliverables
- Work packages. (Figure 4)

So, we are selecting the new business model in the high traffic areas and making a work break down structure for it. (Table 4 and 5)

So, we have implemented the solution of new business model and adding aeroplane fleets in high demand area [6,7].

## Conclusion

The COVID-19 pandemic has wreaked havoc on the aviation industry, bringing the century-old industry to a halt. Many questions remain unanswered with sustainability as a guiding principle and ambitious net-zero emissions targets. Will the industry recover? What will the face of innovation look like?

However, all is not lost. If we're looking for silver linings, the pandemic has forced both the industry and the traveling public to prioritize what's truly important. Out of adversity comes opportunity, and the aviation industry, like many others, demonstrates that companies that innovate, think creatively,

**Table 4.** Breaking down the Major project to deliverables and work packages.

Breakdown	Description	WBS	Code
Implementing new Business model			1.0
Deliverable 1	Conduct survey		1.1
Deliverable 2	Increase the Aircrafts		1.2
WP1	Increase employees	1.2.1	
WP2	Take permissions	1.2.2	
WP3	Maintenance checks	1.2.3	
Deliverable 3	Develop the App		1.3
WP1	Implement sot system	1.3.1	
WP2	Bug Reports	1.3.2	

**Table 5.** Time Phased Budget.

Code	Deliverable and WPS	Budget
1.1	Survey	\$ 15000
1.2	Increase Aircrafts	
1.2.1	Maintenance checks	\$3 million
1.2.2	Increase employees	\$10 million
1.2.3	Take permission from Airport Authorities	\$3 million
1.3	Develop the app	
1.3.1	Slot systems	\$100,000
1.3.2	Bug Reports	\$50,000
<b>Total Budget</b>		<b>\$16,165,000</b>

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and use technology to overcome seemingly insurmountable challenges will ultimately triumph.

To achieve these largely attainable but challenging goals, governments, the private sector, and global institutions should collaborate to create the conditions for rapid deployment of new solutions in order to recover faster and

stronger from the pandemic, while also establishing a tradition of sustainability for future generations to enjoy.

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