

Developing a Value Proposition Through the Analytical Hierarchy Process¹

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Resumen : Durante la década de 1970, Thomas L. Saaty desarrolló una metodología matemática que permite llegar a una toma de decisiones, denominada proceso de jerarquía analítica (AHP), que toma en consideración las alternativas más importantes que se deben manejar para responder o abordar un problema. También considera todos los atributos o criterios lógicos que permiten evaluar si la decisión a tomar es la más eficiente y correcta. Esta investigación aplicada aborda la metodología AHP para recomendar a una aerolínea regional las opciones que deben considerar implementar como beneficios que conformarán su propuesta de valor para sus clientes corporativos, con el fin de incrementar la satisfacción del cliente y revertir los valores de distribución desigual que presenta actualmente. El estudio también aborda conceptos basados en la estrategia y la ventaja competitiva para el desarrollo de una propuesta integral de toma de decisiones basada en evidencia.

Palabras clave: *Toma de decisiones, Proceso de jerarquía analítica, Metodología AHP, Satisfacción del cliente, Valores de distribución.*

Abstract: During the 1970s, Thomas L. Saaty developed a mathematical methodology that allows reaching a decision-making process, called the analytical hierarchy process (AHP), which takes into consideration the most important alternatives that must be handled to answer or address a problem. It also considers all the attributes or logical criteria that allow evaluating whether the decision to be made is the most efficient and correct. This applied research addresses the AHP methodology to recommend to a regional airline the options that

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they should consider implementing as benefits that will make up their value proposition for their corporate customers, in order to increase customer satisfaction and reverse the values of uneven distribution that it presents. at the moment. The study also addresses concepts based on strategy and competitive advantage for the development of a comprehensive evidence-based decision-making proposal.

Keywords: *Decision making, Analytical hierarchy process, AHP methodology, Customer satisfaction, Distribution values.*

Introduction

In our lives in general, we find moments when we must make a decision even several at the same time. A decision is made based on the unknown until uncertain. And while it is true, the uncertainty that surrounds a decision can be mitigated or diminished when you collect information or factors that help you analyze and understand if the decision you are about to make is correct or not.

This is why, on some occasions, the factors on which we rely on to decide, can be measurable and quantifiable and in other cases, the decision you make can be based on intuition or some intangible situation. While it is true, every decision we make should be the answer to a problem. This may impact people, resources and situations that must also be considered and evaluated before taking a decision. The uncertainty of knowing if our decision was correct or not, only vanishes when we get the results of this decision.

At the business level, it happens the same, since the majority of decisions that are made arise in response to some problem and beyond following an intuition, decisions must be based on the option that is most profitable for the company and that is supported by a return to a possible investment that has to be made.

During the 1970s, Thomas L. Saaty developed a mathematical methodology that allows reaching a decision making, named, the analytic hierarchy process (AHP), that takes into consideration the most important alternatives that has to be managed to respond or address a problem; It also considers all the logical attributes or criteria's that allow evaluating whether the decision to be made is the most efficient and correct. This research paper will address the AHP methodology, to recommend a Panamanian airline the options that should be considered to be implemented as benefits that will conform their value proposition for its corporate clients.

To reach the point of recommendation, it will be explained how it works the corporate product and what benefits are being considered on their current proposal. To understand which alternatives could work to improve their offer, a market study (benchmarking) will be presented to comprehend what other companies from the aviation industry are offering to their clients: this paper will also address some concepts based on strategy and competitive advantage that will help create an integral proposal for the company under study.

The information that is being developed, takes reference confidential data. This information is shared exclusively with the professors at the University of Louisville for academic purposes, it cannot be used or read by more people who are not authorized.

Company Background

Compañía Panameña de Aviación, S.A. (also known as COPA), is the flag carrier of Panama. It has 75 years of commenced operations. Its headquarters is located in Panama City, Panama. It currently operates in 81 destinations that belong to 31 countries from central, south, north America, also the Caribbean. Copa, back in 1998 started a partnership with Continental Airline; this is when the history of Copa airlines started as an international carrier.

The total revenue of this airline sums up to 1.7 billion dollars and 9% of this total belong to the income generated by the corporate product. The corporate program is offered to companies that yearly conduct business trips through routes where Copa operates. The Corporate program consists of granting a series of benefits, supported by a commercial contract that establishes an agreed amount of an annual revenue that has to be generated by the corporate account through their business trips.

Since this product started few improvements have been made, however, there are many opportunities to keep working and developing to ensure that this program could be considered, as a preference program for business trips. Some of the opportunities registered for this program go from the improvement in processes required for sale, strategic decisions that allow us to understand the needs of the market and a robust value proposition that could attract more clients.

Corporate Program: How does it work

A. Brief description Corporate Program:

1. Companies enrolled in this program must generate at least \$20,000 dollars annually on business trips.
2. Business trips must be planned along Copa airlines routes.
3. Once the company is enrolled, both parties (airline and company), must sign a corporate contract where its going to be detailed all the rules and benefits related to the program.
4. Once the contract process is completed, the account will be assigned a unique corporate ID, named "Tourcode".
5. The "Tour Code" must be used at the moment of issuance the ticket. This way, every time the company completes a business trip, their flight and revenue will count towards the goal established at the corporate contract. Also the "Tourcode" is the link for the company to apply and collect the benefits earned under this program.

Benefits of the Corporate Program

Our main benefit consists in offer special discounts on tickets with Copa Airlines, that will depend on the agreement the corporate account makes with Copa Airlines. The corporate programs from the aviation industry will depend on the revenue their corporate accounts generate yearly with the airline. So, it's Copa Airlines corporate program conformed by several categories that goes from: Small, Medium Enterprises that generates from \$20,000 dollars yearly, to bigger companies that could generate above \$700,000 dollars yearly.

Our corporate categories or tiers, are grouped as it follows:

Corporate Tier	MIN	MAX
SUPER PREMIUM	\$700,000	>
PREMIUM	\$200,000	>
PLUS	\$100,000	>
STANDARD	\$50,000	>
SMEs	\$20,000	>

Each corporate account will have benefits depending on the family to which they belong; in general, the more business trips the company makes, the higher the discount and greater benefits they will have. The benefits of this corporate program will be listed on table 1.

Table 1: benefits from Copa Airlines Corporate Program

Benefits per Tier	SUPER PREMIU M	PREMIUM	PLUS	STANDA RD	SME'S
Discount on published rates	■	■	■	■	■
Range of negotiate higher discounts	■	■	■	-	-
Status from Copa Airlines frequent flyer program (Connect Miles)	Silver: 4 Gold: 3 Platinum:2	Silver: 3 Gold: 2 Platinum:1	Silver: 2 Gold: 1	-	-
Passes to Copa VIP Lounge	30 passes	20 passes	10 passes	-	-
72 hrs Fare Lock	✓	✓	✓	-	-
Name Changes and Correction	Free	Free	Free	Free	Free

Corporate Revenue and Clients

As mentioned above, the corporate revenue represents 9% of the total revenue from Copa Airlines. This percentage is composed by 1,700 corporate accounts

(approximately), that has chosen Copa Airlines to perform their business trips.

Using an 80:20 rule to prioritize (Pareto analysis), image 1 shows the revenue composition by corporate tiers. As it seems in the image, the 80% of the revenue is composed by Super Premium and Plus Accounts, this means that our corporate program is driven by companies' that yearly expend from \$100,000 dollars to \$700,000 dollars on business trips due to the nature of their jobs.

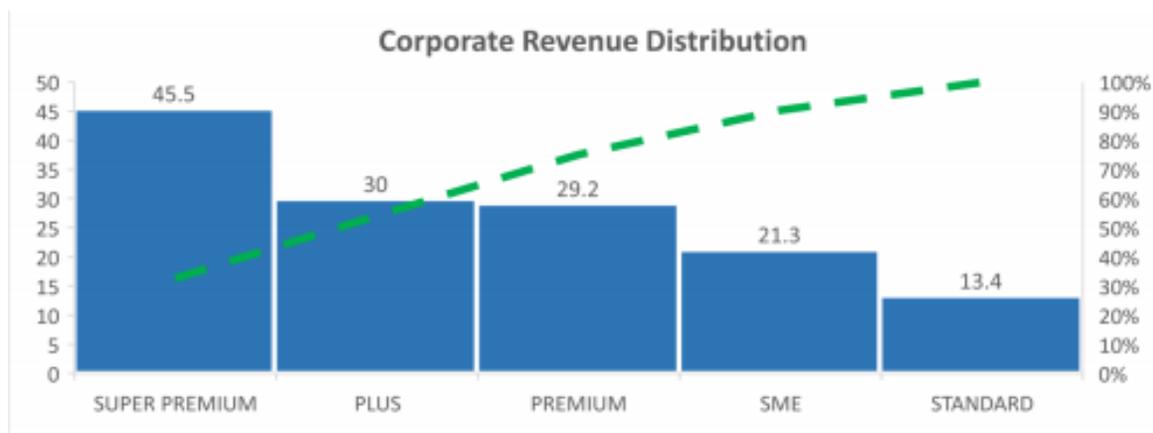


Image 1: Pareto Analysis for the corporate revenue distribution

On the other hand, based on Image 2, we can understand that, the 80% of our client portfolio is composed by the small and medium companies that spend yearly, from \$20,000 dollars up to \$99,000 dollars, on business trips. In other words, 9% of the corporate tiers represents 50% of the corporate revenue.

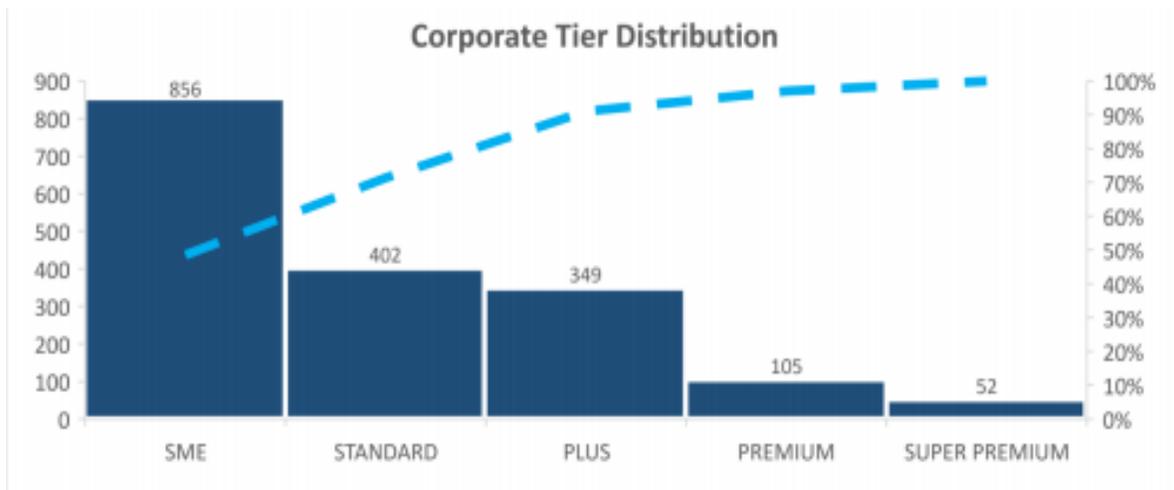


Image 2: Pareto Analysis for the corporate tiers distribution

Benchmarking

(Gambel et al., 2019) The objectives of benchmarking are to identify the best practices in performing an activity and to emulate those best practices when they are possessed by others.

The aviation industry has been evolving and also the corporate programs from airlines are being developed in a tailored way, where the needs of the corporate accounts and the final passengers are being fulfilled. If only a 9% of the companies that spend above \$100,000 and \$700,000 yearly on business trips, are flying with Copa Airlines; with who are flying the other companies with similar travel expenditure?

Based on a benchmark presented at table 2, we can review some of the benefits that other airlines are offering to their corporate accounts with similar travel expenditures that the corporate accounts from Copa Airlines program. You easily can identify the benefits from other corporate programs through the passenger journey and experience; the industry is acknowledging the power of recognize the passenger before, during and after their business trip.

Benefits	AV	DL	AM	AA	UA	LATAM	*CM
Schedule Change Priority		*			*		
Seat Selection		*	*	*	*		
Same Day Change					*		
Corporate Business Portal	*	*	*	*	*	*	
Baggage Check In and Recognition							
Priority Check In		*	*				
Access recognition to VIP Lounges							
Priority Boarding		*	*	*	*		
Reschedule due an irregular operation		*	*		*		
Upgrades	*	*	*	*	*	*	
Customer Experience				*			
Downgrade Protection Prioritization		*	*		*		
Dedicated service line	*	*	*	*	*		

Table2: Benchmark of Airlines Corporate Programs

Note: Right now, CM is not offering any of these benefits to their corporate accounts

Description of the benefits:

1. Schedule Change Priority: Corporate travelers will be prioritized (re-accommodate) during rebooked flights.
2. Seat Selection: Corporate traveler can access complementary preferred seats when they booked specific classes
3. Same Day Change: Penalty waiver for itinerary changes for a flight earlier than scheduled
4. Corporate Business Portal: Portal where benefit can be managed, traveler profiles, reporting tools.
5. Baggage Check In and Recognition: Priority baggage check in and *priority tag*
6. Priority Check In: Priority Check-in at the ticket counter lines
7. Access recognition to VIP Lounges: Recognize

- unique passes to access the VIP lounges (Copa Club) through a QR code.
- 8. Priority Boarding: Priority boarding (*CM: Group#2*)
- 8. Reschedule: Irrops: Priority re-accommodation when a flight is delayed or canceled due to IRROPS
- 9. Upgrades: upgrade for prefer member over other prefer in the same group
- 10. Customer Experience
- 11. Downgrade Protection Prioritization: Enhanced prioritization to maintain their cabin selection
- 12.. Dedicated service line: 24/7 dedicated call center

Besides the benefits presented, other corporate programs are also supported by technological platforms that allow the corporate program to be managed on a much higher level than the one that Copa Airlines is offering. Platforms known as “OBT” (online booking tools) that allow the travel administrator to manage their own travel, it’s an end-to-end booking system, that allow the passenger to book the flight, hotel and car, all in one place. Also, it is a work tool, for the travel manager, that can generate expense reports with a few clicks in the system.

Furthermore, other challenges that Copa is facing against their competitors is the miles’ programs that allows companies to accrue a percentage % of their employee duty flights miles and use them to collect benefits from it. Also through a self-service member website the travel administrator/manager can redeem tickets for business and incentive trips to employees or customers, and through this website can oversee employee performance.

Nowadays, the companies are willing to pursue the program that suits the needs of the company and the passenger, and although the corporate passenger is not the largest group of passengers in aviation industry, they are certainly the most profitable.

Industry and competitive conditions change because forces are enticing or pressuring certain industry participants (competitors, customers, suppliers) to alter their actions in important ways. The most powerful of the change agents are called driving forces because they have the biggest influences in reshaping the industry landscape and altering competitive conditions (Gambel et al., 2019).

Identifying the benefits presented from the industry, as “driving forces,” Gambel et al., explains it as “Changes in who buys the product and how they use it. Shifts in buyer demographics and the ways products are used can alter competition by affecting how

customers perceive value, how customers make purchasing decisions, and where customers purchase the product” (2019). Based on the previous cited text, what strategy will be required to respond the impact of the benefits proposed by the industry; Does the strategy will help increase the 9% of companies that represent the 50% of the total revenue of corporate sales? The methodology in which I’ll present a proposal to take a decision, will be on the succeeding sections.

Literature Review

Closely related to the concept of strategy is the concept of a company’s business model. While the company’s strategy sets forth an approach to offering superior value, a company’s business model is management’s blueprint for delivering a valuable product or service to customers in a manner that will yield an attractive profit. The two elements of a company’s business model are (1) its customer value proposition and (2) its profit formula. The customer value proposition is established by the company’s overall strategy and lays out the company’s approach to satisfying buyer wants and needs at price customers will consider a good value. The greater the value provided and the lower the price, the more attractive the value proposition is to customers. The profit formula describes the company’s approach to determining a cost structure that will allow for acceptable profits given the pricing tied to its customer value proposition. The lower the costs given the customer value proposition, the greater the ability of the business model to be a moneymaker. The nitty-gritty issue surrounding a company’s business model is whether it can execute its customer value proposition profitably. Just because company managers have crafted a strategy for competing and running the business does not automatically mean the strategy will lead to profitability, it may or it may not (Gambel et al., 2019).

What is certain is that every strategy we develop must be considering if the customer that I’m going to obtain with my new proposal is profitable or not. (Marr, 2012, p.136) Not all customers are equal. Some customers contribute substantially to an organization’s profit line while others actually lead to the supplying organization losing money – that is, the cost of delivering the product or service is more than the revenue generated from that transaction.

This could be measured by the customer retention rate, that help the organizations understand the performance of their customer portfolio and explain that a higher retention rate is not necessarily a guarantee of more customers or future retentions.

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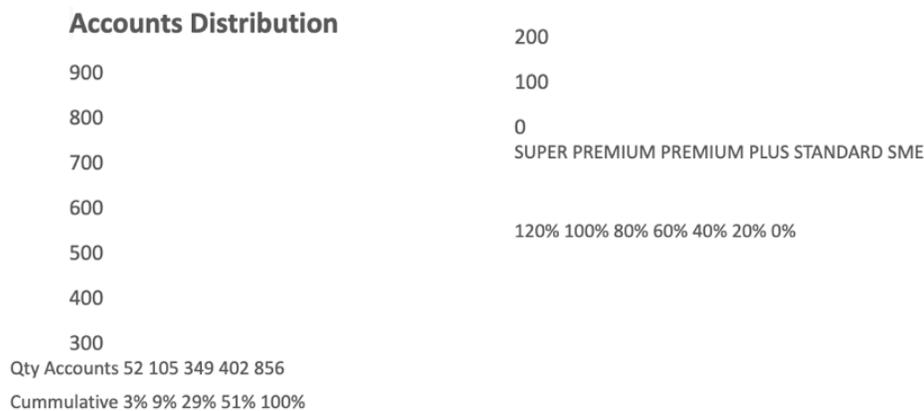


Image 3: Pareto Analysis for the corporate tiers distribution

(Marr, 2012) A final point to remember about retention is that you don't necessarily want to keep all the customers you have acquired. Reasons for this are that some might not be profitable, or some might be more expensive to serve compared to others. This is why the customer retention rate needs to be understood in the context of other measures such as customer profitability and customer lifetime value. Based on information up to august 2019.

Due to limitations on the gathered information, this research paper will not involve the profitability of corporate clients but will only address the importance of recognizing this indicator, prior to performing any project implementation.

On upcoming sections, this research paper will develop a proposal based on AHP. The analytic hierarchy process (AHP) was developed by Thomas L. Saaty during the 1970s (Saaty, 1980). AHP can be described as a “methodology for modeling unstructured problems in the economic, social, and management sciences” (Saaty, 1980). “AHP can be considered as an alternative to the assessment and use of a multi-attribute value function for ranking alternatives, which can be represented as respective outcomes over multiple attributes” (Evans, 2017, p.117). Evans notes that one advantage associated with AHP is that it allows the decision making to be inconsistent in answering questions concerning preferences over multiple objectives; in addition, the method only requires the decision making to answer questions with respect to pairwise comparisons of two objectives, subjective or outcomes at a time.

This research paper will use the AHP methodology to demonstrate the alternatives that should be implemented in the corporate value proposition of Copa Airlines, in order to increase customer satisfaction and reverse the uneven distribution values obtained at the Pareto analysis exposed.

As it seems in the image, the 80% of the revenue is composed by Super Premium and Plus Accounts, this means that our corporate program is driven by companies that yearly expend from \$100,000 dollars to \$700,000 dollars on business trips due to the nature of their jobs.

AHP Methodology

“AHP can be considered as an alternative to the assessment and use of a multi-attribute value function for ranking alternatives, which can be represented as respective outcomes over multiple attributes” (Evans, 2017, p.117)

The assessment based on AHP, asks the client or the experts related to the alternatives under evaluation, to compare the dimensions or criteria following the steps:

- In a pairwise manner
- In terms of their relative importance
- Using a conventional “semantic” scale with 5 level (“equally important”, “weakly more important”, “strongly more important”, “very strongly more important”, “extremely more important”) with possibly 4 intermediate levels

Proposal based on AHP Methodology

Based on the assumption of the airline, acknowledge the importance to perform an improvement on the benefits offered only to the 9% of corporate accounts that represent the 50% of corporate revenue, this project will present the assessment towards the effort of improve their corporate product.

This research paper will use the AHP methodology to demonstrate the alternatives that should be implemented in the corporate value proposition of Copa Airlines, in order to increase customer satisfaction and reverse the uneven distribution of corporates accounts, exposed previously.

In order to address which benefits should Copa Airlines, take into consideration for develop their value proposition, the methodology will be applying step by step as it follows:

1. Define alternatives

Based on the previous benchmark, the benefits presented will be used as the list of alternatives that Copa Airlines could develop to improve its corporate product.

Benefits/ Alternatives	Description
Schedule Change Priority	Corporate travelers will be prioritized (re-accommodate) during rebooked flights and irregular operations
Seat Selection	Corporate traveler can access complementary preferred seats when they booked specific classes
Same Day Change	Penalty waiver for itinerary changes for a flight earlier than scheduled
Corporate recognition	Benefits developed to recognize the importance of having important executives flying with Copa airlines in their business trips: *Baggage Check In and Recognition *Priority Check In *Access recognition to VIP Lounges *Priority Boarding

Downgrade Protection Prioritization	Enhanced prioritization to maintain their cabin selection
Rewards Program (Miles/Points) account and passenger	Program developed for the company to accrue miles for their passengers business trip, also allows a % of accrual for the passenger

2. Define criteria to evaluate and rank the alternatives

Based on indicators that seek the importance of a corporate program, we defined the criteria presented.

Criteria	Description
Services Flexibility and Cost Savings	Benefit that allows the corporate account have a better use of their benefits, usage of benefits as banking and exchanging for another perk that suits the needs of the account.
Improve the passenger experience	Benefits created to build in additional value to the experience when flying in business trips with Copa Airlines.
Competitiveness: Increase Reputation	Robustly product will make the brand of Copa have a better reputation in terms of business trips.
Technical development: Easier to execute/developed	Impact on corporate value chain and Improvement of process (internal)
Increase Airline Profit	Benefits that works as tools that will help on sales increment

3. Design comparative matrix

The comparison will be build, arranging the alternatives and criteria into a hierarchic matrix were the stakeholders can evaluate and assign their subjective judgments on the relative importance of each component.

How much better one benefit performs than another, with respect to **Service Flexibility and Cost Savings**

Schedule Change Priority (Programmed & Irrops)	Seat Selection	Same Day Change	Corporate recognition	Rewards Program (Miles/Points) account and passenger
Seat Selection	Same Day Change	Corporate recognition	Rewards Program (Miles/Points) account and passenger	Downgrade Protection Prioritization
Schedule Change Priority (Programmed & Irrops)	Seat Selection	Same Day Change	Corporate recognition	
Same Day Change	Corporate recognition	Rewards Program (Miles/Points) account and passenger	Downgrade Protection Prioritization	
Schedule Change Priority (Programmed & Irrops)	Seat Selection	Same Day Change		
Corporate recognition	Rewards Program (Miles/Points) account and passenger	Downgrade Protection Prioritization		
Schedule Change Priority (Programmed & Irrops)	Seat Selection			
Rewards Program (Miles/Points) account and passenger	Downgrade Protection Prioritization			
Schedule Change Priority (Programmed & Irrops)				
Downgrade Protection Prioritization				

4. Survey stakeholders of the project

In order to understand which alternative Copa Airlines should develop first, we gather data from a survey applied to 10 experts in understanding corporate client's needs; to understand which alternative with respect of the criteria established, have the highest priority and should be take into consideration to the new value proposition.

To obtain the result, we use a numeric code for pairwise ratings of importance

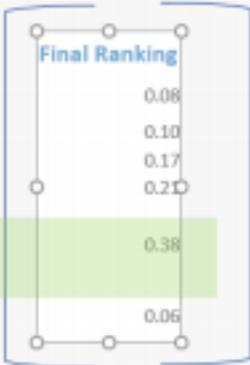
Scale	Description
1	Equal Importance
3	Weak importance
5	Strong Importance
7	Very strong importance
9	Absolute importance

5. Gather results and rank them against each other's

After collecting the results from the respondents, the results obtained from each matrix must be summarized and then divide each alternative by its column total, normalizing the pairwise comparison matrix.

Last step will be averaging the results from the normalized matrix. The results from the 6x5 matrixes are as it follows:

Results Metric	Services Flexibility and Cost Savings	Improve the passenger experience	Competitiveness: Increase Reputation	Technical development: Easier to execute/developed	Increase Airline Profit	
Schedule Change Priority	0.10	0.12	0.08	0.02	0.05	0.08
Seat Selection	0.09	0.21	0.05	0.11	0.06	0.10
Same Day Change	0.34	0.17	0.15	0.12	0.15	0.17
Corporate recognition	0.11	0.26	0.24	0.18	0.22	0.21
Rewards Program (Miles/Points) account and passenger	0.44	0.14	0.46	0.42	0.48	0.38
Downgrade Protection Prioritization	0.02	0.11	0.02	0.15	0.05	0.06



The alternative that Copa Airlines should implement first and take into consideration for its value proposition is the development of a *Rewards Program* that gives the company and its passenger, the facility to earn and redeem miles when travelling in business trip.

Conclusions

Panama is an important headquarters of multinational companies that offer significant sources of work for the country. Currently in Panama there are companies from different industrial sectors, such as pharmaceutical companies (Grünenthal, Merck Sharp and domme), manufacturing, food, retail, logistics (Maersk, Seaboard.), and with a more robust corporate product from Copa Airlines, these Panama-based companies will be flying and choosing Copa airlines as their carrier of preference for their business trips. Promoting Copa Airlines as a carrier that moves executives within Latin America, not only promotes the brand of the airline, but also promotes the name of Panama as a business and investment country. This could stimulate foreign investment and new places of work for Panamanians; also, it will promote an increase of revenue generated by high-profile passengers, that conform business tourism. This is for, it's important for

AHP is a useful methodology that can be used for personal and enterprise projects that requires to make decision. Review the customer retention rate of corporate clients, to understand the profitability of our current portfolio. Having this exercise done, the value proposition should be made towards the accounts that are being profitable to Copa.

Build a value proposition for the corporate program will help increase customer satisfaction and reverse the uneven distribution values obtained at the pareto analysis exposed at corporate accounts distribution.

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