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Training Synergy

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Training Synergy

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ABSTRACT

Brazil is facing a growth in the airline industry where all the major airlines are currently hiring pilots, flight attendants, and mechanics. One of the challenges of those airlines is to provide training for all these professionals. Many times they do not have instructors or classrooms available. It is crucial for the airlines to promote faster and better training, to reduce cost, save time and resources to prepare a better professional. In this paper, we are showing the possibility of increasing the cost performance of airline training by providing alternatives to airlines. The idea is to promote synergy between the airlines to optimize and share training between companies. If airlines combine their training, they can have more classrooms, seats, and flexibility together with lower costs and saving time

KEYWORDS: Airlines training, Training synergy, Brazil Airlines

INTRODUCTION

Many companies in the world require training as part of their culture and operation requirements. For airlines, it is extended to a second step due to the mandatory needed training per the related country aeronautical authority necessary to keep a high safety environment that is mandatory for this industry. Due to the resources involved like trainers, students, room, infrastructure, time, preparations, etc., training has a significant impact on operations and budgets for airlines. All airlines in Brazil must have a training program, but most parts of these programs are identical for all companies due to ANAC (Brazilian Aviation Authority) standard requirements. The basic training is given for all employees in functions like mechanics, pilots, flight attendants, airport ramp personnel, check-in staff, and are similar between airlines. This study analyzes the load factor of the Brazilian airline training classrooms. It creates a process to provide seats that can be used by increasing the availability of vacancies and dates for training. Our solution will generate greater flexibility, thus resulting in a reduction in the hiring bottleneck and an increase in the load factor in the classroom. With this, airlines will have more flexibility to

train their employees, besides being able to reduce the amount of headcount needed for the training staff. The operational groups within an airline are composed of several areas. Pilots, mechanics, and flight attendants are groups of employees highly specialized and trained that have a lot of training that can be shared between the companies. These groups will be used through this study, but the process presented herein can be expanded for other areas. It will also provide a general overview related to strategic partnerships to clarify the current scenarios of the industry. The purpose of this study is to show an alternative for better use of time, money, and resources when offering basic training. It will improve the cost performance of the airline's training by increasing the availability of dates and seats through the creation of synergy between companies. This synergy will reduce the cost of operations, which gives airlines the flexibility to work under unpredictable schedules changes. Also, it will lead to more significant interaction between professionals from different companies that will result in enriching the knowledge and exchange of experience during the training.

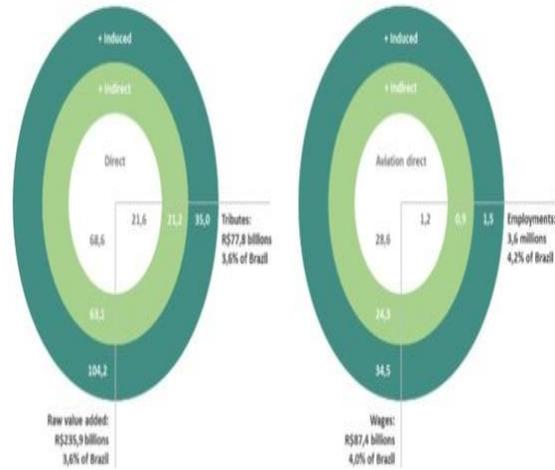
Strategic Partnerships and the Generation of Results

The airline industry in Brazil is essential and has a significant impact on the economic activity of the country. Data from IBGE 2017 shows that Brazil's size is 8.5 million square kilometers, with an estimated population of 208.4 million inhabitants and a population density of 22.43 inhabitants per square kilometer. The territorial dimensions are enormous, and without aviation, it would be impossible to reach some areas. According to the National Civil Aviation Agency – ANAC (2011), the regular carriers companies transported approximately 88 million passengers, and by the end of 2016, the number reached 100 million, an increase of 13% over 2011.

The National Civil Aviation Agency (ANAC) regulates all Brazilian Airlines operating in Brazil. The regulation includes all operational rules and mandatory training in some functions with the primary goal to unify knowledge and ensure safe operation for all. The total number of airline employees is approximately 53,000 at the end of 2016, with regular operations at 126 commercial airports in the country, as stated by ABEAR. According to ABEAR (2017), Brazilian commercial aviation contributes 3.1% of Brazil's economic output, with R\$ 312 million added to the Brazilian economy, approximately R\$ 39 million produced directly by airlines, airports, and ground services.

Figure 1

ECONOMIC IMPACTS OF AIR INDUSTRY ON TOURISM IN BRAZIL - 2017



The composition of the total operating expenses of an airline company is complicated. It is related to aircraft maintenance, leasing and insurance costs, fuel costs, airport charges, personnel costs, among others. Brazilian aviation saw its operating expenses grow approximately 32% from 2002 to 2015, reflecting one of the most critical components, the fuel cost, which increased by 74% over the same period.

In the first semester of 2019, the airline market in Brazil changed with the exit of Avianca Brazil due to bankruptcy. Now there are three major airlines: LATAM, founded in 1976, GOL founded in 2001, and AZUL, founded in 2008. According to ABEAR 2017, those airlines combined have more than 53.000 employees.

Table 1

Public Air Services Charges			
(*) Controlled Airline Companies (Millions of R\$)			
	2017	2016	2015
(-) Personnel	-5.308,2	-4687,5	-5103,3
(-) Crew and staff costs	-568,4	-392,4	-279,6
(-) TRAINING	-56,4	-35,8	-39,8
(-) Fuel and lubricants	-9.370,4	-8173,9	-10052,1
(-) Passengers assistance	-251,2	-178,7	-342,3
(-) Extrajudicial damages	-57,7	-56,5	-78,9
(-) Court convictions from air services	-300,3	-215,1	-183,1
(-) Catering	-386,7	-412,1	-479,9
(-) Handling	-829,2	-488,6	-506,7
(-) Aircraft cleaning	-15,1	-18,8	-18,6
(-) Insurances	-95,7	-121,9	-119,8
(-) Leasing	-4.205,1	-4652,5	-4604,4
(-) Aircraft & Engines Maintenance/ Overhaul	-2.253,5	-2652,5	-2429,3
(-) Depreciation/ Amortization/ Exhaustion	-1.087,6	-1091,1	-1053,2
(-) Airport charges	-1.160,4	-1112,8	-1164,7
(-) Specific prices	-47,6	-37,9	-26,5
(-) Communicatio and aid to air navigation charges	-1.311,0	-1293,5	-1157,6
(-) Taxes and fees	-338,7	-379,9	-139,1
(-) Other air public services charges	-1.042,6	-1103,4	-1146,8

Source: ABEAR

Table 2 – Number of Employees (December 31, 2017)

	AVIANCA	AZUL	GOL	LATAM Airlines	Total/Function
Pilots	652	1,706	1,545	1,987	5,890
Flight Attendant	1,242	2,419	2,862	4,724	11,247
Mechanics	407	1,663	2,105	2,307	6,482
Airport Staff	1,511	2,919	5,027	3,587	13,044
Other Staff	1,645	2,638	3,869	9,466	17,618
Total/Airline	5,457	11,345	15,408	22,071	54,281

Source: ABEAR (2017)

Alliances and Partnerships

The competitive business environment has required companies to be flexible, innovative, and cost-effective. However, few have the capabilities and resources to adopt this behavior consistently. This is why the number of those that embrace partnerships and alliances is increasing, achieving competitive advantages (Kanter, 2001).

The new competitive processes, as explained by Doz and Hamel (2001), are related to the partnership between companies. The reason for that is that the competition no longer happens only between products or services, but between different business concepts, as well. According to Lewis (1992), the strategic partnership enables companies to gradually achieve the capacity to develop products, reduce costs, acquire new technologies, and get more resources to invest in its core competencies.

The objectives for the formation of an alliance can be classified into two categories. Those oriented to the search for greater efficiency, by the use of shared resources, or those with a market orientation, in which case another classification would also be pertinent: defensive or offensive objectives (Kleymann; Seristo, 2001). This efficiency enhance-oriented concept, as stated by Kleymann, Seristö (2001), also enables the associated companies to develop a more offensive position in the market.

In the United States, many airlines split their training between other companies and sometimes outsource for third parties. Those trainings are not exclusively to their airlines, which is the case of Pan Am Academy. Pan Am international flight academy is a leading provider of training support for airlines and aviation professionals. It is a surviving division of original Pan American World Airways, which was founded in 1980 in Miami, Florida, being one of the most experienced training facilities in the world. Its focus is to provide professional training for pilots, flight attendants, and mechanics. Pan Am has FAA-approved programs that meet the requirements of Part 91, 121, 125 and 135, which enable the Company to provide training for airlines such as initial and recurrent.

Many airlines flying from and to Miami use Pan Am structure for training, sometimes combining classes between them and creating a partnership. By doing this, they are optimizing their resources by reducing costs and saving time.

The business partnership connects companies with strong exploration intent that seeks, above all, to ensure new gains with the application of resources and specific capabilities available to each partner.

Strategic Role of Training and Personnel Qualification

Currently, the airlines have their schedule of training following internal procedures. In this specific analysis, we will deal with the regular training that is mandatory by the regulatory agency (ANAC). These required training address some of the many functions that airlines have in common, such as airport agents, administrative assistants, ramp operators, cargo operators, operational supervisors, airport coordinators, pilots, mechanics, and flight attendants.

Activities performed near an aircraft represent high complexity and have an increased risk of incidents or accidents. In an attempt to reduce and ultimately prevent these occurrences, mandatory training is required. The training is designed to address all of the activities that will be performed by each job function, as well as their frequency and evaluation.

Companies in Brazil, such as AZUL, GOL, and LATAM, and all the leading airlines in the world, are committed to ensuring that all employees with specific activities are trained and approved to perform their duties with technical capability and with minimal to no risk to the operations. In a macro analysis, it is possible to identify that each airline, operating in the same 126 commercial airports in Brazil, has an individual structure to meet precisely the same training demand. Therefore, we have at least three times the contingent number of instructors and classrooms for applying the same mandatory training regulated by ANAC.

Besides all the workforce and resources needed, it is also necessary to consider the logistics related to moving people all over Brazil. In this environment of constant change, professional education has played a strategic role in organizations. According to Ilyas, Hin, and Adnan (2016), training, previously was seen as an administrative function and has evolved into a

strategic initiative that aims at organizational profitability. Organizations are recognized as knowledge organizations, as much as a worker is a knowledge worker, as people are continuously learning and expanding their skills and capabilities, says Drucker (2008). Santos (2010) presents thirteen learning modalities, as shown in Table 3.

Table 3- Modalities of Learning

Type of Training
In-Person Training
Distance Learning (e-learning)
On Job Training
Job Rotation
Internship
Technical Visit
Informative Meetings
Dissemination Meetings of Training
Conferences
Subscription to journals and magazines
Workshop
Seminar
Congress

In the aviation industry, the most used types of learning are in-person training and on the job training, due to the technical skills and background needed for operational activities.

DATA SOURCE, COLLECTION, AND ANALYSIS

As a source, training data from AZUL, GOL, and LATAM that are the three leading airlines in Brazil was used.

Data collected included:

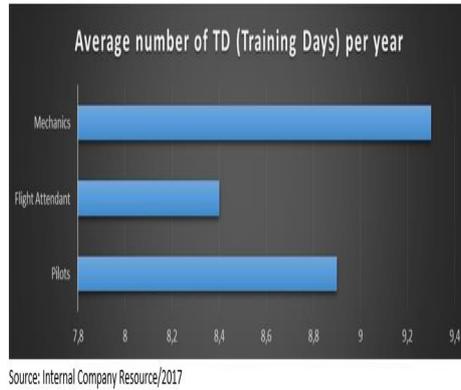
- . A number of seats offered for each function (pilots, mechanics, flight attendants).
- . A number of seats used for each function.
- . Training Programs approved by ANAC (Training Catalog).

As shown in Graph 2, it is possible to see the average number of days spent on each function. Mechanics has the highest number of TD per year (9.3 days).

Graph 2- Average number of TD (Training Days) per year



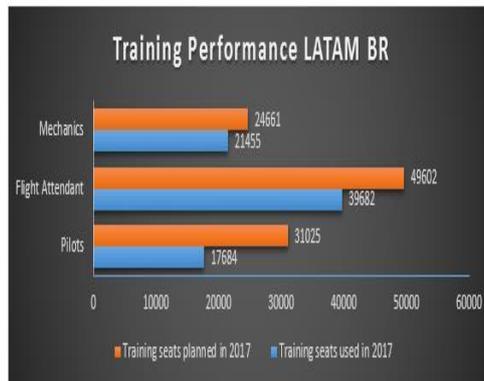
Source: Maintenance: Internal Company Resource/2017; Crew: Estimative based on other airlines and ABEAR data



To meet the needs of the days of training for beginners, revalidation, indoctrination, etc., the companies schedule the classes based on the necessity of the different areas. They offer a scale of flexible training in separate schedules, seeking to reduce the number of adjustments of working hours per shift, the number of trips for training, and scheduling the training with the least possible overlap.

Through Graph 3 and Graph 4, it is possible to see the number of training seats scheduled for 2017 multiplied by their real occupation showing flexibility.

Graph 3- Training Performance LATAM BR



Source: Internal Company Resource/2017

Graph 4- Training Performance AZUL



Source: Internal Company Resource/2017

It is possible to note that each Company has training seats planned versus training seats used, but no one used 100% of its seat availability.

Based on compiled data with all companies' information, the Graph 5 shows that the macro scenario of the training class occupation has a high quantity of seats that are still available and not used (wasted).

Graph 5- Training Performance of Airlines

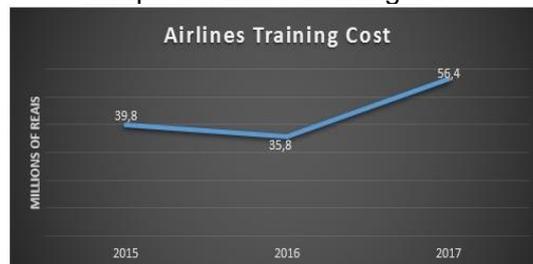


Source: Internal Company Resource/2017

To make training seats available, companies need to provide resources, such as infrastructure, instructor, simulators, and so on; all these resources generate costs.

From the data presented in Table 1, we can get to Graph 6 that shows the Brazilians' airline training cost in recent years.

Graph 6- Airline Training Cost

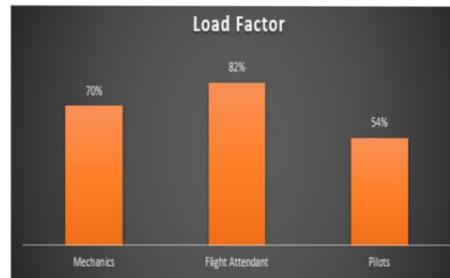


Source: Internal Company Resource/2017

Training seats, as well as the seats of an aircraft, are perishable. In other words, we only have one opportunity to use them. If the occasion is not taken, it will not be possible to recover the resources used to conduct the training.

Based on the data of Graph 5, we can compare the planned training seats against the used training seats, as shown in Graph 7.

Graph 7- Load Factor

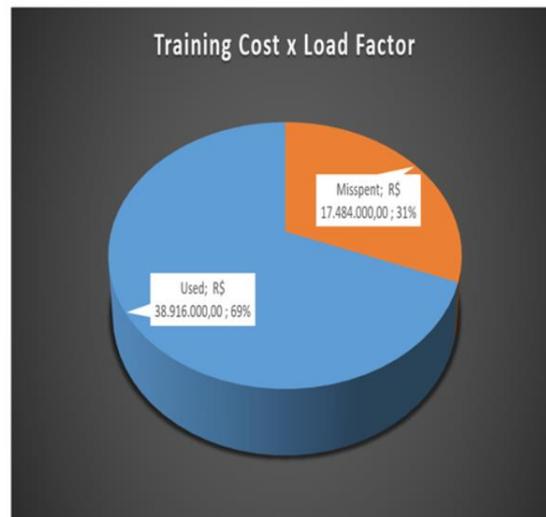


Source: Internal Company Resource/2017

Given the characteristics of each Company and the changes inherent to the market, we can describe some factors that contribute to this low load factor: same schedule, operational contingencies, sickness, and turn-over.

Therefore, it is possible to calculate the average between these functions to find a number that represents the Average Load Factor in Brazil, considering airlines presented in this capstone, which is 69%. Considering this information, it is possible to generate Graph 8 that shows the correlation between training cost and load factor.

Graph 8- Training Costs x Load Factor



Source: Internal Company Resource/2017

Considering the high level of misspent resources verified through the data shown in Graph 8, this capstone provides enough information to promote the evaluation of resource sharing between the three airlines.

OUTCOMES

As described in ANAC IS 145-010 (Maintenance Organization Training Program), airlines can share training with other companies to improve the performance against cost and quality, as shown below:

Caputo et al.

Training Synergy

"5.3.5.3 To manage costs, companies with similar needs can share training costs. These companies may also want to work as training entities or work with an aeronautical school to develop courses. Such schools and other companies may formalize cooperation agreements."

Table 4 brings some examples of courses that are similar between airlines and can be shared.

Table 4- Similar Training Examples

Course	Public	LATAM	AZUL	GOL
Low Visibility Operation	Pilots/Mechanics	X	X	X
PBN – Performance Based Navigation	Pilots/Mechanics	X	X	X
ETOPS – Extended Twin Operations	Pilots/Mechanics	X	X	X
RVSM – Reduced Vertical Separation Minimum	Pilots/Mechanics	X	X	X
Meteorology	Pilots	X	X	X
Air Traffic Control Regulations	Pilots	X	X	X
AVSEC – Aviation Security	Pilots	X	X	X
Standard Practices	Mechanics	X	X	X
Standard Practices for Avionics	Mechanics	X	X	X
Standard Practices for Structure	Mechanics	X	X	X
Emergency Procedures	Pilots/Flight Attendant	X	X	X
Dangerous Good	Pilots/Flight Attendant/Mechanics	X	X	X
Damage Assessment	Mechanics	X	X	X
Fire & Smoke Training	Pilots/Flight Attendant	X	X	X
ITC – International Traffic Control	Pilots	X	X	X
Ground School A320	Pilots	X	X	
Level 2 and Level 3 Course for A320 Family	Mechanics	X	X	

In a meeting with Mr. Antonio Augusto do Poço Pereira, ABEAR Chief Financial Officer, held on 08/22/2019 at ABEAR headquarters in São Paulo, we received the confirmation that ABEAR is willing to support this research. It is described below the proposed processes to ensure synergy between the companies to increase the use of training seats and flexibility for operation.

General Considerations

The following procedure only applies to available seat-based training offered by companies on the Training Schedule Form. There is no obligation for a company to provide training and seating for the program. The Decision Board is responsible for deliberating using common sense in the event of disputes related to this program between companies.

Training Schedule

01 – Survey of macro needs for next year

In the third quarter of the year, companies are expected to fill the Training Schedule Form with next year's macro needs. The Decision Board decides the deadline for this submission.

02 – Annual Training Schedule

With the Training Schedule Form completed by companies, next year's schedule will be defined, presenting:

1. Which Company will conduct the training
2. What is the place of training
3. Number of seats available for each Company

After the discussion rounds, the Training and Seating Grid is defined, which is uploaded to the ABEAR website.

03 – Micro needs assessment and adjustments

Companies can readjust their needs by adding or removing participants from each training, always targeting the next quarter.

To this end, the Training Necessity Form is filled by companies with the additional needs that may have arisen for the next quarter.

04 – Review of training and seating availability schedule

The Decision Board meets to deliberate on micro needs for the next quarter, will be reviewed:

1. Which Company will conduct the training
2. What is the place of training
3. Number of seats available for each Company

Each Company chosen to conduct the training must review the proposal, and its Decision Board representative must accept, decline, or make another proposal. After the discussion rounds, the Training and Seating Grid is defined and uploaded to the ABEAR website. There are no limits on removal, but the Seat Value will be charged anyway. For additions, it is considered the Company that completed the Training Necessity Form first.

When there are no vacancies available for a particular Review Period, each Company should either take care of their training or jointly create new classes. The Training Necessity Form should be filled anyway. If any company decides to make training and seating available, it must add the offer to the Training and Seating Grid. Software that manages the Program site on the ABEAR site automatically identifies supply and demand and schedules training.

05 – Financial Agreements:

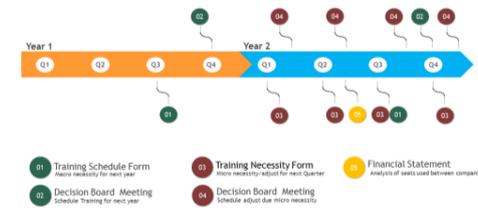
For each seat occupied by one Company in training for another Company, one unit of Seat Value is counted. This control is done automatically by the software that manages the Program website on the ABEAR website. Once a year, the full accounting is made (sums and deductions), and the monetary value per Company for each other Company is defined.

Each Company must generate an invoice against the other Company, which will have a payment term of 90 days from the invoice date.

Training Program Timeframe

To summarize the entire process already detailed in this chapter of the capstone, the macro training program timeframe can be observed in Figure 1.

Figure 1- Training Program Timeframe



Each Company will fulfill the training schedule form or the training necessity form, in case of need to change the schedule, which will be submitted to the decision board to evaluate and then provide the financial statement.

CONCLUSION

A higher amount of training available will bring more agility in the personnel qualification process since it enables to speed up the training process. Consequently, it is possible to have more people capable of maintaining the operation, making it more flexible, so that technicians can accomplish more training, improving more and more their skills.

With the information provided in the methodology section, it was possible to see the number of training resources available being wasted and the opportunity for the improvement of training cost-performance. Based on the process in the analysis section, this opportunity is captured and shared with other airlines, reducing the 31% misspent presented in Graph 8. With the proposed program, airlines supporting this idea, and ABEAR already interested in it, the Training Synergy implementation and its success is highly feasible. Also, this Program concept can be implemented between any airlines in the world or any other industry that has similarities between their training, adjusted to their realities and environment.

RECOMMENDATIONS

We want to recommend for airlines to form a collaborative group and commit resources to the implementation of this program, making the necessary adjustments to the process as required and according to the reality of each Company. Also, the engagement of ABEAR is imperative for the project's triumph so everyone can get benefits from the cost reduction that could be achieved. Topics for future development and implementation

The following topics are a brief list of points that should be analyzed and implemented to grant the Program success:

- Development of the software that manages the Program website. It will need IT resources from airlines and ABEAR. Security and reliability of the application are mandatory for the project's credibility.
- External audit of the software that manages the program on the ABEAR website to grant the project's credibility, pulling away any compliance issues and concerns among companies that are direct competitors.
- A detailed study about the similarity of training which may be offered between airlines: the preliminary analysis showed that companies operating the same type of aircraft have a high degree of training similarity.
- Verification of impacts related to legal and tax aspects, as there will be non-financial (course balance) and financial exchanges between companies. This study should

understand what fees will be applied and how the contract between the parties should be built.

- Related to improving the load factor of training, it is essential for the airlines to manage the schedules of the employees together with ABEAR and the board to increase the load factor.
- With the implementation of this methodology and following the premises presented, we will have a constant growth of the load factor of the classrooms, where we will undoubtedly have a jump from 69% to more than 85% load factor, consequently reducing the misspent by 16% representing then a real economy of R\$ 9,020,000.00.

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