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Decision-Making Tool For Procurement For Brazilian Airlines

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Abstract

Globalization stimulates transactions between countries by offering products and services with distinct quality and prices. Tax payment is remitted abroad during negotiations involving agreements between countries. We are proposing a change in the procurement process by including the utilization of a new tool fed with all the different types of agreements valid in Brazil to simplify the decision of the procurement team.

Keywords: Procurement tool, procurement process, airlines, Brazil

1. INTRODUCTION

Most countries need to buy products or services from others to supply self-demand. That makes international trade a valuable tool to fill this gap. The export volume worldwide was only 124 billion dollars in 1960, and in 2017 this number leaped to approximately 18 trillion dollars, according to The World Bank (2018), confirming the importance of international trade to any nation worldwide. The tendency to trade with other

nations or suppliers in different countries became very useful for many reasons, such as reducing costs or compensating for the lack of technology, among other reasons. There is a necessity to hire services from other nations for Brazilian companies. However, this process brings a tax cost when you pay the supplier abroad. According to Flores-Macías (2019), when a Brazilian company hires services abroad, it must pay around 51% of additional tax. Most suppliers are outside Brazilian territory when contracting third-

party services in the aviation industry.

Consequently, many services are hired by foreign suppliers. As a result, when Brazilian airlines pay for these services, the payment is made in a foreign currency that involves a currency exchange process, including taxes. Based on historical data for 2017, we estimate that Brazilian Airlines pay annually Brazilian Real (BRL) ~306MM in taxes to remit payments for suppliers outside Brazil. 71% of this cost is related to Imposto sobre a renda retido na fonte (IRRF - withholding tax), BRL ~218 MM, which is usually paid for services. Our estimation is based on actual data from 2017 for one of the Brazilian airline companies and this company's market share. IRRF is the only Tax payment remitted abroad, which can vary from country to country and is compensated by the renderer of the service.

According to Afonso et al. (1998), since Brazil changed its currency from Cruzeiro to the Real in 1994, the taxation achieved and averaged 29% of the Gross Domestic Product (GDP). Still, based on Afonso et al.'s (1998) analysis, 45.94% of the tax burden comes from taxes on goods and services. Those taxes represent 13.29% of the GDP, which means it is almost half of the total taxation of the GDP. Analyzing the types of taxes paid today in Brazil, the five central taxes represent 70% of the 28.9% of taxes paid in the GDP, and the Imposto Sobre Circulação de Mercadorias (ICMS), the biggest of them, represents a quarter of the taxes (Afonso et al., 1998). The ICMS imposes taxes on every transaction related to goods and services. The four other central taxes are the Contribution to Social Security, IRRF, Contribuição para o Financiamento de Seguridade Social (COFINS), a tax for social contribution, and; Imposto Sobre Produtos Industrializados (IPI), and taxes over industrialized products. Brazil maintains reciprocity of treatment with the USA promulgated by Ato Declaratório SRF Nº 28, de 26 de Abril de 2000. This interchange allows American companies to compensate the amount of tax payable abroad USA territory in the amount owed to the Internal Revenue Service (IRS) of USA.

Our research focuses on the process for tax payments remitted abroad. The taxes involved in the remittance are IRRF, CIDE, PIS/Importação, COFINS/Importação, ISS, and IOF. However, our focus is on the IRRF, which varies across countries and is compensated by the renderer of the service. The procedure adopted today by Brazilian Airlines is to gross up the IRRF amount

because it is a cost for the company.

The main objective of this research is to review the process for purchasing and selling goods and services among other countries in Brazil to make procurement processes more efficient. We develop a process to support the procurement department in considering the IRRF amount when hiring a service abroad. Additionally, we analyze the findings and then generate a negotiation procedure for the procurement area to consider before closing a negotiation. The interested parties that, in some way, are positively affected would be all the partners and stakeholders of the airlines.

2. LITERATURE REVIEW

IRRF

IRRF (withholding tax) is not an exclusive tax of Brazil; it exists in almost every country worldwide. In the fifteenth century in Florence, a tax-denominated scalata was created; it would be a predecessor of the Brazilian income tax IRRF (Nóbrega, 2014). This tax, however, was not calculated based on income but on capitalization, so it did not last very long. According to Nóbrega (2014), the modern history of income tax originated in Britain in the seventeenth century. This tax was administered during the war between England and France. England needed to raise funds to finance the war, so people were taxed according to the income consumed, that is, the people's goods. Over time, this tax changed, and William Pitt requested that the tax is on expenses and tax on income (Nóbrega, 2014). This tax became final under the name Income Tax.

With the success of Income Tax, Germany also decided to adopt a tax system in their country. In this system, all income of professional work and liberal professionals were taxed. In other countries, like Italy, the tax was instituted in 1894 and was charged on any movable income (Nóbrega, 2014). In addition to these countries, the United States also began taxing personal incomes in 1861 (Nóbrega, 2014). People were imposed with the following table of gains, and this model was well accepted until the end of the Civil War. After the war, the tax suffered several criticisms and was withdrawn. In 1909, the country needed resources, and then-President William Taft appealed to Congress and succeeded in getting Constitutional Amendment number 16 approved and American income tax instituted. In France, the income tax had its first application in 1916. In France, it is mandatory to file a tax return. It was calculated as a direct tax, divided

into eight, according to the origin of the income, with a progressive supplementary tax. This model was what inspired the tax that is used in Brazil. Brazil created the IRRF in 1922, promulgated by law 4.625, de 31 de Dezembro de 1922, becoming the most critical Tax in Brazil. Payment abroad due to the acquisition of technical services is subject to the IRRF at 15%, as established in article 3 of the Provisional Measure 2.159-70/2001.MEDIDA PROVISÓRIA No 2.159-70, DE 24 DE AGOSTO DE 2001. It is essential to highlight that IRRF over payments remitted abroad is retained, and the taxpayer is the service provider, so the value should be withheld as a legal rule. However, it is often commercially agreed that the borrower pays the amount of tax, which is done by a gross-up clause under the agreement.

Nowadays, Brazil maintains agreements with 34 countries to avoid double taxation and has reciprocity of treatment with the United States of America that allows companies in both countries to utilize those credits to prevent double taxation depending on the case. Instrução Normativa RFB nº 1.455, de 6 de março de 2014 determines what is considered a technical service and assistance to determine the IRRF incidence on payments made to a foreign domiciled company at the rate of 15%.

Technical service and technical assistance should be subject to the payment of IRRF. However, article 98 of Lei no 5.172, de 25 de outubro de 1966 (Código Tributário Nacional – CTN) provides that international agreements and conventions must be observed. Ato Declaratório Interpretativo RFB nº 5, de 16 de junho de 2014 explains how we should classify technical services: profit of company according to Article VII of the agreement or as a royalty according to Article XII of the contract. The document clarifies that we must follow what is described in the transaction. If there is an instance of classifying technical services as royalty, we must retain IRRF in Brazil and abroad. However, suppose the agreement does not classify technical service as royalty; we can classify the payment as a profit to the company, according to Article VII of the deal. In this case, the Brazilian companies do not need to retain (pay) IRRF locally in Brazil.

Brazil has agreed with France to avoid double taxation, promulgated by Decreto nº 70.506/1972. Article VII of the mentioned Decree determined that the company's profits of a contracting state may be taxed only in that State unless the undertaking carries on business in the other State by a permanent establishment. As we can see, the agreement between Brazil and

France does not mention any technical services in Article XII.

Other agreements work between Brazil and France, with Austria promulgated by Decreto nº 78.107/1976, Sweden published by Decreto nº 77.053/1976, and Finland posted by Decreto nº 2.465/1998. So remittances made by Brazilian carriers to companies domiciled in those countries, for payment of technical services and technical assistance, with or without technology transfer, do not have IRRF.

According to Article XII of those agreements, 31 countries classify technical services as royalty. It results in an IRRF payment with different rates according to the residence country of the hired company.

The United States of America does not maintain a double taxation agreement with Brazil. Still, there is the reciprocity of treatment in place. Suppose the USA law allows companies to compensate for the tax imposed out of USA territory. In that case, the Brazilian companies can do the same as Ato Declaratório SRF Nº 28, de 26 de abril de 2000 determines. According to the Internal Revenue Service (2018), if an American company paid or accrued foreign taxes to a foreign country and is subject to taxation in the USA at the same income, maybe it is possible to take either a credit or an itemized deduction.

The United Kingdom has the same procedure as the USA, defined by Ato Declaratório SRF Nº 48, de 27 de Junho de 2000. If the Brazilian carriers intend to hire a service of any company from these countries, it is necessary to negotiate the taxes clause to withhold the tax. On the other hand, the companies located in USA and UK will be able to compensate for the IRRF payment.

According to Instrução Normativa RFB nº 1.455, de 6 de março de 2014, if a company is located in a tax-haven jurisdiction, the IRRF rate must be 25%. Instrução Normativa RFB nº 1037, de 04 de Junho de 2010 determines the list of countries that Brazilian fiscal authority considers a tax-haven.

Business Process Management

According to Hammer (2014), Business Process Management (BPM) has two antecedents: Six Sigma and Reengineering. Those are techniques created in the industry to control performance, assure standards, and clarify processes defined. Having a process that is well written helps companies to understand each step that leads to the resolution of an activity. It also helps to

establish controls and continuous improvement. BPM is a technique for understanding and designing all the processes that generate economic value for a company. By definition, all the methods are the ones that have defined input and output.

Sometimes people do not see how the steps of that process and how they are done generate value for the final input (Baldam, ABEPRO, & Rozenfeld, 2014). BPM is a technique that can give savings to the company that uses it. In Heathrow Airport, one of the busiest globally, BPM implementation helped them save about £30 million in 2010 (Viewpoints, 2018). The BPM was used in design, construction, or maintenance projects and the business process management process in the airport. They made a designed in-house process of all the sequence of operations from when the plane touches down the runway and leave it again. From that, they did optimize each process and easily managed unusual scenarios by some rules they created in their system. With that new tool, they could increase their on-time performance from 68 to 83 percent and save 90 liters of fuel per flight due to the optimization process on the runway (Viewpoints, 2018).

The utilization of a new technique needs to have an objective to be implemented. For example, in the Appian (2014) case, BPM was used in Melbourne Airport to modernize safety inspections, customer responsiveness, and incident management. Melbourne Airport is the second busiest airport in Australia and the primary Airport in Melbourne (Appian, 2014). With the design of the process using BPM, they changed from a paper-based data collection to an automated process. That accelerated their processes, giving more awareness of the problems and responsive actions to issues.

BPM Application

Like any other change and improvement in a company, BPM needs support from all involved and the top managers. In cases of BPM applied to enterprises, external factors, top management support, standards, and communication are listed as essential points in the implementation phase to assure that the BPM adoption is successful (Vukšić, Brkić, and Tomičić-Pupek, 2018).

Modeling and understanding of a process are accessible. You need to discover the process that needs to be modeled, define and describe how it is done, communicate and share it with the people involved and finally try to make it easier, more profitable, and/or have a better return

(Ould, 2005).

Plenkiewicz (2010) defined which attributes need to be identified and collected when designing the process: the goal, objectives, and quantifiable results; specific inputs; specific outputs; the number of activities performed; and resources.

These attributes led to a graphic representation of the process (Figure 1). Figure 1 shows the visualization of the process's resources, activities, and results. The process needs to be defined "as is" to determine the process "to be." Both methods must be validated by a technical expert linked to the process (Plenkiewicz, 2010).

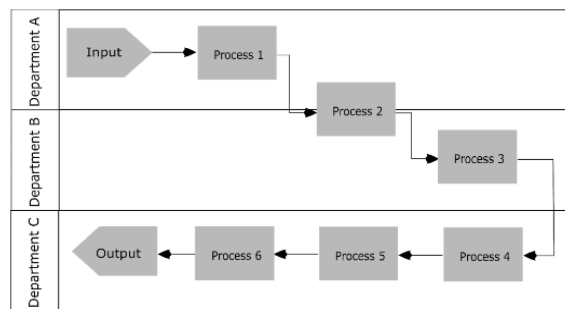


Figure 1: Example of Process-Driven Organization

Bandara and Opshal (2017) detailed in their study case for a small enterprise in Norway all the steps to successfully implement BPM in a company. After understanding the organization and its value and strategy, they make a stakeholder analysis to understand their power and interest in making changes. One of the main problems and issues for their implementation, especially for being a small company, was the commitment of people and alignment to the company's values.

Plenkiewicz (2010) suggests the following steps capture the process to ensure that all the BPM information is acquired. There is not a restricted order that needs to be followed, but the sequence of steps could be:

- Identify outputs and customers.
- Identify inputs needed for the process to produce outputs.
- Identify suppliers;
- Identify process steps and the preliminary sequence.

With all those steps done, the process can be validated and reorganized with the validation of the technical expert-defined. This helps to capture the process systematically. However, the method does not require advanced tools or

sophisticated background. All the elements can be defined in brainstorming sections.

Vom Brocke and Schmiedel (2015) affirmed that BPM today is a technique suitable for diverse processes, but it is necessary to understand how to apply it in those different areas. One of the methods sorted by them states that the analysis can be guided by simple principles of BPM to build long-term innovations. The main idea is to understand the purpose of the process and how to generate value for it. Vukšić, Brkić, and Tomičić-Pupek (2018) considered in their study some consensual dimensions for adopting the BPM: goals and objectives of the initiative, scope, and internal process characteristics. Those authors emphasize the importance of proper alignment between the strategy and a well-structured process. Vukšić, Brkić, and Tomičić-Pupek (2018) suggested qualitative data be collected through interviews with answered questions made in free form. Structured interviews will only be needed to obtain quantitative data. The experts in the process can define the process. Those authors also analyzed three cases of implementing BPM and measured them qualitatively by limiting organizational, environmental, and capability factors. The conclusions were that the use of BPM brought benefits in all of those three contextual dimensions (Vukšić, Brkić, and Tomičić-Pupek, 2018).

In the Croatian International Airport Case Table

(Vukšić, Brkić, and Tomičić-Pupek, 2018), the need for the structuring process came from the external environment and competition. The phases of the process of BPM implementation were to identify landscapes and goals of the process; discover the AS-IS process in low-level details; analyze the process and identify optimization possibilities; make process changes, and a TO DO proposal of the new process. That well-structured implementation process successfully led the airport to adopt the BPM strategy, which left the company with good evaluations on reputation and compatibility.

According to Alter and Recker (2017), a new process model can be an outcome when a diagnostics of an actual process is made. Understanding an approach might lead to an understanding that a new one needs to be implemented. When that happens, it is essential to know how the process is done and how to make some changes or repairs to build a new one.

3. METHODOLOGY

We followed the BMP method to design the process following the five steps identifying objectives, stakeholders, inputs and outputs, process, design, diagnostics, and lastly, identifying repairs and new initiatives.

The team had two informal meetings with the Tax Manager and two stakeholders from the procurement department of Brazilian Airlines to

Phases of project	What?	How?	Outcomes for Service acquisition
1. Identify objectives of the process	1.1. Understand why the process of acquisition is done, the importance of it and areas involved	From information given and the subject-matter expert.	1.1. Tax Manager
2. Identify stakeholders	2.1. Identify who all the employees involved on the process of acquisition. 2.2. Identify the different areas that support the process.	Trough Interviews made on free form.	2.1. Procurement Department 2.2. Tax and Legal department
3. Identify inputs and outputs	3.1. Identify inputs 3.2. Identify opututs	Trough Interviews made on free form.	3.1. Inputs: - 34 double taxation agreements; - 2 reciprocity of treatment documents; - Actual formal process of procurement; 3.2. Outputs: - Service Provider decision;
4. Process: design, diagnostic and new proposal	4.1. Process Design AS IS 4.2. Diagnostic of actual process 4.3. Process Design TO BE	Informal brainstorming sections with subject expert and stakeholders	4.1. Two informal conversation sections with subject expert and Procurement Department 4.2. Desing of new proposal by project team 4.3. Validation of process TO BE with subject-matter expert
5. Define repairs and new initiatives	5.1. Identify how to apply the process changes proposed 5.2. Validate with subject-matter expert and stakeholders	Propose inciatives, methods or tools to repair the process	5.1. Creation of a tool to help the new step added to the process 5.2. Validation with Procurement Department and Tax Manager

Table 1: Process Management Methodology

understand the process and identify the steps, activities, and tools used in quotation service abroad.

We sketched the proposal of the actual process "as is" during the meeting and simulated some scenarios considering the exact process to identify possible gaps in hiring services abroad. We drew the new process "to be." It was presented to the Tax Manager to review and ensure its applicability. Some changes were recommended. The final version was validated with the Tax Manager, acting as our subject-matter expert. We then utilized Microsoft Excel and Microsoft Access, two programs licensed to all Brazilian airline companies, to develop our tool. The five steps made in the data collection and process definition are detailed in Table 1.

4. AS-IS Process

After conducting some informal interviews during our BPM process, we understood the actual process of hiring services abroad, as described below in Figure 2.

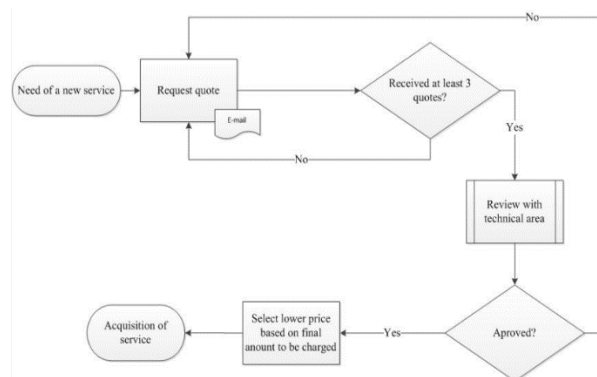


Figure 2: Actual Process on the Service Acquisition

The process starts with determining the need to hire a maintenance service. This need comes from a technical department so that the procurement team can choose the best service for the company. The quotations are required for all the suppliers registered in the company's suppliers register. After at least three quotes are received, the technical area that made the request needs to be consulted to ensure that all technical aspects are covered in the quotations. With the approval of those applicants, the procurement team chooses the supplier that offers the minimum price for the same service. That is the end of the process, where the problem was identified. The process makes the choice of the supplier based only on the final amount proposed

on the quotation. Tax consideration is absent when selecting the supplier. The analysis doesn't account for the country of origin and agreements established by Brazilian laws. Not considering the contracts can be tricky. We'll use an example to show its impact. Consider a quote (Table 2) for engine maintenance abroad, receiving proposals from two companies, one located in France and another in the United Arab Emirates.

Company	Country	Cost of Service
Company A	France	100.000
Company B	United Arab Emirates	90.000

Table 2: Example of Quote for an Engine Maintenance Without Include the IRRF

In this example, Company A offered the same service as Company B for 100.000 and 90.000, respectively. The company from the United Arab Emirates offers the best price. In the AS-IS process that considers only the final amount charged, Company B will be chosen. The amount of IRRF to be paid was not considered when evaluating the proposals. Considering that an agreement establishes a gross-up clause for France in this example, the IRRF payment can abstain. If the tax impact is found, the final amount paid by the company won't be the same as charged by the supplier. Table 3 shows a 25% IRRF tax to be paid on the final amount charged by supplier B. The price offered by Company B was better, but the negotiation with the French company will be the best. Considering this tax in the analysis not only changes the result of the decision of the actual process, but also allows a saving of about 16% on the money spent on the transaction

Company	Country	Gross up ?	Cost of Service	IRRF rate	IRRF amount	Final Amount
Company A	France	NO	100.000	0%	0	100.000
Company B	United Arab Emirates	YES	90.000	25%	30.000	120.000

Table 3: Example of Quote for an Engine Maintenance Including the IRRF Tax

Diagnostic of Actual Process

The flaw detected in the process occurs because the procurement department does not know about these taxes and overlooks them during

negotiations. It would be different if they had access to and understood this information. Once they review the tax agreements, it would be easier to realize that the United Arab Emirates is a tax haven jurisdiction according to Receita Federal do Brasil and have an IRRF rate of 25%. On the other hand, a technical service paid to a company located in France does not have the IRRF due to applying the Double Taxation Agreement signed between Brazil and France.

So the final diagnostic seen for the actual process is:

- The procurement department doesn't have the acknowledgment of agreements and tax haven jurisdiction;
- The procurement department doesn't know how to apply the quotations to the agreements and tax haven jurisdiction.

With this diagnostic, we could design the process to be that needs to consider tax agreements without requiring a significant acknowledgment of the resources involved in the transactions.

5. TO BE Process

We propose a new process, but now including the impact of tax when hiring services abroad, as described below in Figure 3. It's just one more step in the daily activities, but that can result in significant savings.

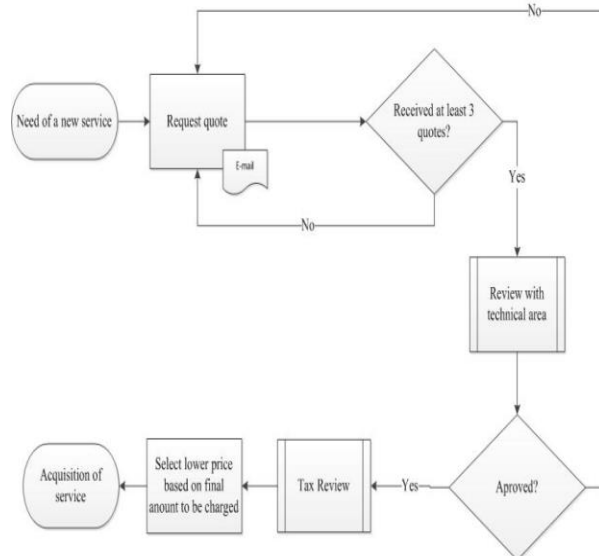


Figure 3: Proposal Process on the Service Acquisition

Another process flow in Figure 4 was created to summarize how the various agreements should be considered. First, we need to check if the

service country is the United States or the UK, with a tax of 15%. 25% of IRRF should be discounted if it is a Tax Haven Country. Then, we need to check if the country has a double taxation agreement with Brazil. If it has, there is a second checkpoint to be done. No need to gross up if it has the agreement and classifies under article VII. If there is an agreement, it does not classify in section VII. If the country does not apply in any of these cases, the IRRF to be discounted is 15%.

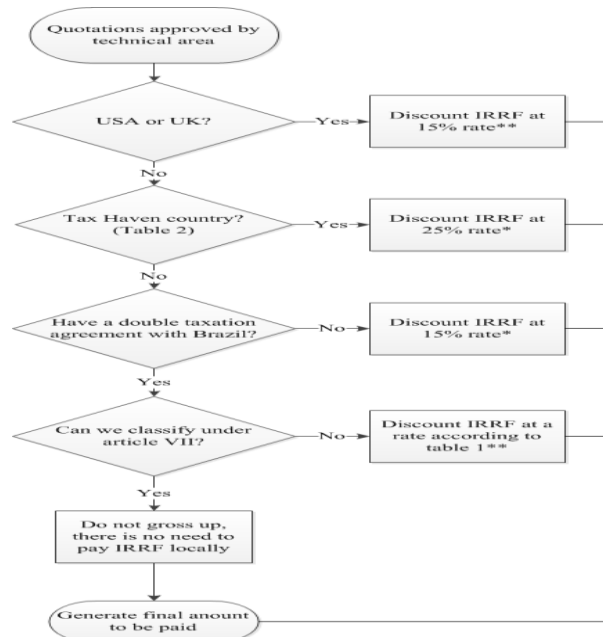


Figure 4: Tax Review Process

In those cases marked with a * in the process, it is essential to remember that the IRRF law establishes that the taxpayer is the company that is rendering the service. If the company located abroad cannot utilize the amount paid in Brazil as a credit, we could accept the gross-up. For those cases marked with **, the tax clause should be negotiated with the supplier. That means the company located abroad can utilize the amount paid in Brazil as a credit. That clause should allow the supplier to withhold the IRRF amount when remitting payment. It is impossible to negotiate the tax clause; maybe we could accept the gross-up in these cases.

Following all these steps can be complicated for anyone without knowledge about laws and agreements that determine the amount of tax. We found a need to compile all the information quickly, so the procurement area doesn't need an expert on those agreements, and any employee now or in the future can obtain the same quotation result. We developed a tool using Microsoft Office Excel (Figure 5). It has

information on all the countries and how the different types of taxation apply. The objective of this tool is to be a user-friendly application that any person in the company can use.

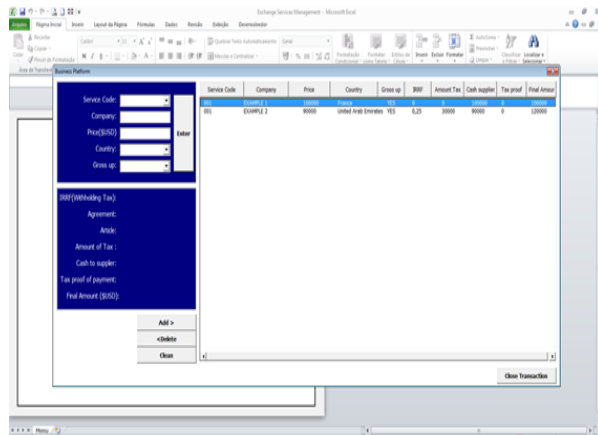


Figure 5: Exchange Management Services System

Exchange Services Management System

The Exchange Services Management System developed to calculate international negotiations was created in Microsoft Excel. Within this program, there is also the possibility of creating macros using a developer in visual basic allowing us to automate those tasks we repeatedly do. On the other hand, a database composed of tables in Microsoft Access was used. This program is designed to create and administrate databases within the Windows operating system. It is oriented so that people can manage their databases relaxed and practically. The Exchange Services Management System is multiuser and has a macro installed on each computer, which feeds the information database in Microsoft Access installed in the corporate network; for better understanding, see Figure 6, which graphs the system's behavior.

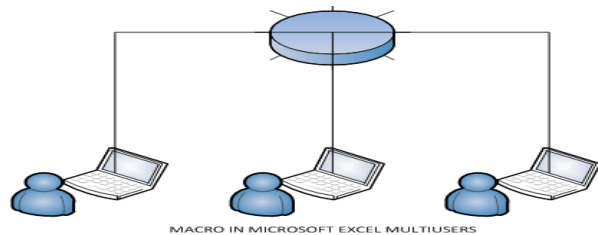


Figure 6: Multiuser Connection

The database is composed of five tables. The first one, called Agreements, contains all the decrees and numbers to use as a reference for each type of transaction (Figure 7).

Agreement
Decreto nº 87.976/1982
Decreto nº 78.107/1976
Decreto nº 72.542/1973 and Decreto nº 6.332/2007
Decreto nº 92.318/1986
Decreto nº 4.852/2003
Decreto nº 762/1993
Decreto nº 43/1991
Decreto nº 75.106/1974
Decreto nº 95.717/1988
Decreto nº 2.465/1998
Decreto nº 70.506/1972
Agreement with no effect since, January 2006
Decreto nº 53/1991
Decreto nº 510/1992
Decreto nº 5.576/2005
Decreto nº 85.985/1981
Decreto nº 61.899/1967 and Portaria MF nº 92/1978
Decreto nº 85.051/1980
Decreto nº 6.000/2006 and Ato Declaratório Interpretativo SRF nº 1/2007

Figure 7: ESM Database – Agreements Table

In the second table (Articles), the article number related to each Decree shown in the previous table can be found, see Figure 8.

Article
article
Article XII
Article VII
NA
Article XI

Figure 8: ESM Database – Article Table

The third table is where all the information about each of the transactions made in the past will be stored. Called Banco (Figure 9). This is the central database with the following data:

- Code of each transaction; generated automatically;
- Code of each service; manually registered in the system;
- The company chosen to contract the service; manually inserted;
- Value of the transaction; entered manually;
- The country chosen to contract the service; selected from a list of options;
- Gross up option; selected from a list of options;

In this way, automatically and according to the data inserted, the system generates as shown in Figure 9:

- Related IRRF;
- Amount of Tax;
- Cash Supplier;
- Tax Proof;
- Final amount;
- Date and time of negotiation;

Código	Item Code	Company	Price	Country	Gross up	IRRF	Amount Tax	Cash Suppli	Tax Proof	Final Amou
001	TESTE		1,000,00	Argentina	YES	15,00%	176,47	1,000,00	0,00	1,176,47

Figure 9: ESM Database – Banco Table

In the fourth table, there is the detail of each agreement. The information about each country as code, IRRF for that country, and agreement, Decree, or related article, can be found in the BD Table (Figure 10). This table must be updated with current legislation to correct calculations when analyzing a negotiation. We suggest that the Tax Department must conduct all further updates.

Código	Country	IRRF	Agreement	Article
10	American Sam	25,0000%	Tax haven	N/A
11	Andorra	25,0000%	Tax haven	N/A
12	Anguilla	25,0000%	Tax haven	N/A
13	Antigua and Ba	25,0000%	Tax haven	N/A
14	Argentina	15,0000%	Decreto nº 87..	Article XII
15	Aruba	25,0000%	Tax haven	N/A
16	Ascension Islan	25,0000%	Tax haven	N/A
17	Austria	0,0000%	Decreto nº 78..	Article VII
18	Bahrain	25,0000%	Tax haven	N/A
19	Barbados	25,0000%	Tax haven	N/A
20	Belgium	10,0000%	Decreto nº 72..	Article XII
21	Belize	25,0000%	Tax haven	N/A
22	Bermuda	25,0000%	Tax haven	N/A
23	British Virgin I	25,0000%	Tax haven	N/A
24	Brunei	25,0000%	Tax haven	N/A
25	Campione D 'It	25,0000%	Tax haven	N/A

Figure 10: ESM Database – BD Table

In the fifth table (Country), the codes corresponding to each country can be found. This functionality was implemented so the user can select the country directly from a box of options (Figure 11).

Código	Country	Cliq
1	Afghanistan	
2	Albania	
3	Algeria	
4	Andorra	
5	Angola	
6	Anguilla	
7	Antigua & Bart	
8	Argentina	
9	Armenia	
10	Australia	

Figure 11: ESM Database – Country Table

Finally, in the sixth table, called Item, all the possible services are to be used. Those can be registered and inserted from the Excel system, which contains the code of each service (entered manually); the name of each service (added manually); and a small description of each of them so that the user can identify what they need to work with, see Figure 12.

Código	Name	Description
001	ENGINE MAINT	Engine Maintenance
002	AIRCRAFT MAI	Aircraft Maintenance
003	CONSULTORIA	Consultoria

Figure 12: ESM Database – Item Table

In conclusion, the proposed change allows registering the types of services and comparing contributions for these services by country, considering all the variables shown in detail, and considering the current legislation. In this way, the user responsible for acquiring the service will not need to spend time analyzing the law by country or with calculations to make an election considering the price variable. Also, the possibility of error is minimal, generating a record in the database for future analysis.

6. CONCLUSIONS

The opportunity to improve the actual process of hiring services abroad is clear. We recommend further studies to understand these laws and agreements to different kinds of transactions made in Brazilian countries within countries abroad. For example, the taxation laws apply differently to acquisitions of services and products. The tax to be reduced will be different and maybe with a lower percentage, but in airlines today, any saving, however small, helps increase the airline's cost performance. Also, it will be interesting to validate all the necessities and opportunities from the airline perspective in Brazil in a formal process. In this work, all the interviews and consultations were informal. It is essential to mention that if the company paid any tax unnecessarily, it is possible to recover it by proofing it to Receita Federal do Brasil and asking for a credit to be used in the subsequent payments remitted abroad. Companies can check, and a request is limited to five years past the date of application.

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