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BUSINESS PLAN OF SENSORIAL MUSEUM

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Abstract

This thesis consists on the creation of a sensorial museum – IMMERSIVUS –, located in the city of Lisbon through the rehabilitation of an existing industrial pavilion at Beato Creative Hub. The museum's goal is to provide an innovative video-mapping service featuring immersive exhibits using technologic components.

Over the last years, the tourism sector has been growing in importance in the Portuguese economy, with a significant increase in tourist arrivals in Portugal. The dynamics of Tourism in Portugal has allowed more revenue and job creation. Tourist demand (consumption by foreigners and residents) rose to €26,700 million in 2017, which represents a 14.50% growth over the previous year (INE). These forecasts are favourable to the implementation of this business plan.

To understand the attractiveness of the market, the business plan begins by presenting an analysis of the mediate environment and the market, focusing on the cultural entertainment industry and the current competition in Lisbon. Subsequently an internal analysis is presented to define the museum's target audience as well as the strategy to follow. To finish, the resources and investments necessary for the implementation and operation of the museum are identified and quantified, followed by an economic and financial analysis that evaluates the viability of the project.

Based on the study carried out in this business plan and the financial-economic analysis of the project for the period of 10 years, it is concluded that there is feasibility for the progress of the presented project.

Resumo

A presente tese consiste na criação de um museu sensorial – IMMERSIVUS –, localizado na cidade de Lisboa através da reabilitação de um pavilhão existente na Hub Criativo do Beato. O objetivo do museu é oferecer um serviço inovador de vídeo-mapping, apresentando exibições imersivas com recurso a componentes tecnológicas.

Nos últimos anos, o sector do turismo tem vindo a registar uma crescente importância na economia, verificando-se um aumento significativo de entradas de turistas em Portugal. A dinâmica do turismo em Portugal tem permitido mais receitas e a criação de postos de trabalho. A procura turística (consumo por parte de estrangeiros e residentes) subiu para os €26,700 milhões em 2017, o que representa um crescimento de 14.50% face ao ano anterior (INE). Estas previsões mostram-se favoráveis à implementação deste negócio.

Para perceber a atratividade do mercado, no plano de negócios começa-se por apresentar uma análise do meio envolvente e do mercado, focando-se no setor turístico de entretenimento cultural e na atual concorrência de Lisboa. Posteriormente é apresentada uma análise interna para se definir o público alvo do museu assim como a estratégia a seguir. Para terminar, são identificados e quantificados os recursos e os investimentos necessários à implementação e operacionalização do museu, seguidos por uma análise económico-financeira que avalia a viabilidade do projeto.

Tendo por base o estudo realizado neste plano de negócios e a análise económico do projeto para o período de 10 anos, conclui-se que existe viabilidade para o avanço do projeto apresentado.

Palavras-chave: Plano de Negócios, Tecnologia, Turismo, Video-mapping

Sistema de Classificação JEL:

- L83 – Recreation and Tourism
- M10 – General Business Administration

Acknowledgements

Index

Index of Tables

Index of Figures

List of Acronyms

APT – Automatic Payment Terminal

ASAE – *Autoridade de Segurança Alimentar e Económica*

AT – *Autoridade Tributária*

BdP – *Banco de Portugal*

BRL – Brazilian Real

CAE – *Classificação Portuguesa das Atividades Económicas*

CAPM – Capital Asset Pricing Model

CML – *Câmara Municipal de Lisboa*

ECB – European Central Bank

EGEAC – *Empresa de Gestão de Equipamentos e Animação Cultural*

EU – European Union

GDP – Gross Domestic Product

IMF – International Monetary Fund

IMI – *Imposto Municipal sobre Imóveis*

INE – *Instituto Nacional de Estatística*

IRC – *Imposto sobre Rendimento de Coletivos*

IRR – Internal Rate of Return

IRS – *Imposto sobre Rendimento de Singulares*

JESSICA – Joint European Support for Sustainable Investment in City Areas

MICE – Meetings, Incentives, Conferences and Events

NPV – Net Present Value

PENT – *Plano Estratégico Nacional do Turismo*

PPP – Purchasing Power Parity

QREN – *Quadro de Referência Estratégico Nacional*

RNAAT – *Registo Nacional de Agentes de Animação Turística*

ROA – Return on Assets

ROE – Return on Equity

ROI – Return on Investment

SWOT – Strengths, Weaknesses, Opportunities and Threats

UNWTO – World Tourism Organization

USA – United States of America

USD – American Dollar

VAT – Value Added Tax

WC – Working Capital

WTTC – World Travel & Tourism Council

1. Executive Summary

This master thesis consists in the evaluation of an investment project for the creation of a sensorial museum – IMMERSIVUS – located in Lisbon city centre, at Beato Creative Hub. The motivation for the development of this theme arises from the interest in studying the tourism sector in Portugal, especially in the city of Lisbon, to understand the reasons that fostered the exponential growth of this industry over last years. The WTTC data show that the tourism has had an estimated direct impact of €14.30 million on the Portuguese economy in 2018 and is projected to reach 15 million euros this year.

The purpose of the museum is to enhance the culture and history of Lisbon through an immersive show, with the objective to reach not only the touristic audience but also the locals. The museum's exhibitions consist on staging different scenes, previously filmed, 3D and 2D animations and sounds. Video-mapping will be projected onto walls, floors and ceilings to create a 360º experience that invites the audience to roam freely throughout the museum's facilities.

The project foresees the rehabilitation of an old industrial pavilion in the city, turning it into a sensory museum with an exhibition hall. The use of the premises will be contracted with its owner and will correspond to the attribution of a part of the museum's billing.
The entrance price of the museum ranges between €7.00 and €15.00, according to the type of ticket purchased. These values are presented in detail in pricing policy.

The initial investment amount is €2,000,000.00, of which €800,000.00 will be financed by equity and the remainder through a bank financing (€1,200,000.00). The project has a duration of 10 years, being the first year of implementation 2020.

The indicators considered in the economic and financial analysis prove the viability of this project. This project achieves: a NPV of €473,588.18 (discounted @ WACC = 6.94%), meaning that it is possible to recover the investment made, remunerate the capital invested and still generate a surplus; an IRR is 9.37% which is higher than the WACC 6.94%; and a Pay Back Period of 8 years, which is lower than the lifetime of the project (10 years).

Based on the information presented above, it is possible to state that this is a project economically viable and with a potential of investment.

2. Introductory Chapter

2.1. Description of the Innovative Project

The cultural dynamism of Lisbon as well as its diversity of experiences, make it an increasingly demanded city, either for business or leisure tourists. It is being considered one of the most preferred destinations to make a city-break.

Lisbon has been recording a sustainable tourism growth over the last years (recording an aggregate increase of 10% in the number of visitors and 8.30% in the amount spent by each tourist since 2009), being predicted a slowdown of this growth in the coming years (*Turismo de Portugal*).

These forecasts lead to the creation of tourism-related businesses, especially hotels, local lodgings and tourist animators. In this context, this project consists in the development of a business plan of a sensorial museum, following a coherent structure that encompasses several stages, ending with an evaluation and investment analysis and decision.

The concept of the sensorial museum is a unique immersive experience in Lisbon through video-mapping and other technological features. It turns real space into virtual ones using optical illusory images and movement of 3D objects, walls, water and floors. Real actors and dancers are introduced into our virtual worlds to interact with the project surfaces. Our visitors will get in touch with Portuguese culture, especially the traditions from the city of Lisbon. The content of the exhibitions during the museum's launch will be closely linked to the history of the city of Lisbon, highlighting its most important historical events.

2.2. Sensorial Museum's Technical Sheet

Company	IMMERSIVUS	
Concept	Immersive Sensorial Experience using Video Mapping and Other Technological Features	
Economic Activity	CAE 9329 – *Outras Atividades de Diversão e Recreativas*	
Legal Form	Limited Partnership	
Company's Social Capital	€800,000	
Average Entrance Price	€11.00	
Geographical Location	Beato Creative Hub, Lisbon, Portugal	
Number of Employees	Seven	
Duration of Business Implementation	10 months	
Capital Structure	**Equity:**	€800,000
	Liabilities:	€1,200,000
Economic and Financial Indicators	**NPV @ WACC=6.94%:**	€473,588.18
	IRR:	9.37%
	IR:	8 Years
Project Life	10 Years	

Table 1 - IMMERSIVU's Technical Sheet

Source: Author

3. Literature Review

The goal of this part of the project is to gather data for the development of the business plan of the sensorial museum. It allows to understand the concept of tourism, its principal forms and recognize the existent offers of immersive experiences in the world.

3.1. Concept of Tourism

Tourism is a key driver of development in many countries worldwide, because it is one of the largest industries in the world (Annex 1). In real terms (i.e. considering exchange rate fluctuations and inflation), the international receipts from tourism worldwide during 2018 totalized an amount of €1,700 thousand million (UNWTO, 2019: 2) (see Annex 2).

To define the concept of tourism it should be considered the various groups that participate in and are affected by this sector. Their perspectives are vital to the development of a comprehensive definition of tourism. The UNWTO enounces the most widely tourism concept, which was approved by the United Nations Statistical Commission, in 1993. According to the UNWTO (UNWO, 2018: 1), tourism is "a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes". The term usual environment is intended to exclude trips within the area of usual residence, frequent and regular trips between the domicile and the workplace and other community trips of a routine character. In the Annex 3 can be found the classification of tourism by UNWTO.

3.2. Tourism Trends

For a better understanding of the trends of the touristic sector, we divide the analysis in four levels. First we analyse the tourism at worldwide level to understand the main tendencies through the world. Next, we focus our research on the EU level and to complete our analysis we study the tourism in Portugal with special attention to the city of Lisbon.

3.2.1. Worldwide Perspective

Tourism is a global force for economic growth and development, driving the creation of more and better jobs and serving as catalyst for innovation and entrepreneurship. Modern tourism is closely linked to development and encompasses a growing number of new destinations. Strong demand from conventional and emerging markets fuelled growth in the global receipt, which follows the positive trend recorded in international tourist arrivals.

During 2018, destinations worldwide recorded a total of 1,400 million international tourist arrivals (UNWTO, 2019: 2). In most recent publications, UNWTO predicts a robust growth in international tourist arrivals of between 4% and 5% in 2020.

As stated by UNWTO in the Long Term Forecast Report of Tourism Towards 2030 (Annex 4), international tourist arrivals worldwide are going to grow 3.30% every year between 2010 and 2030 to attain 1,800 million by 2030 (UNWTO, 2017).

3.2.2. European Perspective

In the EU, as in the whole world, the tourism plays an important role in the economy mainly because its creates employment. It contributes 5% to the EU GDP and accounts for 5.20% of the total labour force (European Parliament).

Over last years, Europe has reinforced its position as the world's number one destination. In 2018, the number of international tourist arrivals reached 1,400 million worldwide, 710 million of which were in Europe (which represents a 51% share of the tourism market) (UNWTO, 2019: 10). A long-term study forecasts a future modest growth in European tourism to an estimated 595 million tourists until 2030 (UNWTO, 2017).

The core objective of the EU policy is to maintain Europe's standing as a leading tourist destination while maximizing the industry's contribution to growth and employment (European Commission). The quality of touristic offer needs to be continuously improved to achieve this goal.

3.2.3. Portugal Perspective

In Portugal, tourism sector has grown well above the sector worldwide. Per BdP, the competitiveness of tourism is independent of prices and can be explained by a relative increase in the perception of Portugal as a safe destination and an improvement in the quality of services offered (BdP, 2019).

In 2018, the number of foreign tourists visiting Portugal reached a record of 12.76 million people. Tourism has been increasing steadily since 2010, with hundreds of new hotels and thousands of refurbished apartments for tourists opening across Portugal (INE, 2018). Although this growth is remarkable, BdP believes that there is still room for growth. However, BdP highlights that is essential to focus on different factors from price competitiveness, namely in an increase in the quality and added value of the services offered that contribute to the loyalty of visitors and to an increase in average revenue per tourist (BdP, 2019).

3.2.4. Lisbon Perspective

Travel and tourism plays an important role in Lisbon's economy too. Lisbon had an average touristic growth of 10.60% between 2009 and 2017. During 2017, 4.94 million international travellers stayed overnight in Lisbon, which translates in total expenditures of 1,780 million euros (WTTC, 2018). Lisbon's tourism sector contributed 5.30% for the city's GDP in the year of 2016, which is higher than in almost all the other European cities (WTTC, 2018). In terms of jobs and unemployment, more than 100,000 people are engaged in tourism related jobs; this constitutes a noteworthy 7% of the city's workforce.

Lisbon's economic futures relies in large part on tourism and the forecasts for touristic activity look promising with national GDP set to grow by 4.70% per year on average over the next decade, reaching a total of €5,300 million by 2026 (WTTC, 2018).

3.3. Case Studies – Sensorial Museums

Tourists are demanding for unique experiences; they want something that is once in a lifetime experience. To achieve these expectations, innovative concepts of tourism offers are emerging. When combining with new technologies, this offers can attract even more visitors. An example of this is the video-mapping experiences that have been created for cultural as well as for commercial purposes (Annex 5). Video-mapping is a technique for video projection that can be used to bring buildings and objects to life, create immersive environments and to provide exciting interactive experiences. This technique always involves a combination of an extremely high degree of creative skill and intricate technical planning.

3.3.1. France

Culturespaces is a private actor for global management of monuments and museums, the creation of art centres and immersive digital exhibitions. It has developed a unique and innovative concept for the site: AMIEX® (Art & Music Immersive Experience). This concept is currently being used on two spaces in France, at Les Carrières de Lumières in Baux-de-Provence and the Atelier de Lumières located in Paris.

3.3.1.1. *Les Carrières de Lumières*

In 2011, the City Council of the City of Baux-de-Provence entrusted to Culturespaces the management of the visits, the cultural animation and the promotion of Les Carrières de Lumières. It is located on a quarry within the rock of the Hell Valley, which has 7,000 square meters of projection area with ceilings up to 18 meters high. The visitors walk around the

quarry totally immersed, as they are surrounded by imagery and sound. Since its opening in March 2012, it presented exhibitions related to works of art of artists known worldwide such as Van Gogh, Monet, Michelangelo and Leonardo da Vinci. In the Annex 6 is presented the detailed history of Les Carrières de Lumières.

3.3.1.2. *Atelier des Lumières*

Given the success of the Les Carrières de Lumières, the Culturespaces decided to create the Atelier de Lumières on an unoccupied foundry in Paris with the same concept. It opened in April 2018 and since then it has been a success, already presented exhibitions from Gustav Klimt, Hundertwasser and Van Gogh.

3.3.2. Japan

3.3.2.1. *teamLab Borderless*

The digital art collective teamLab (an interdisciplinary group of artists, scientists and more) has presented multiple exhibitions in Japan and other locations over last years. However, it was only in 2018 that teamLab opened a permanent installation in Japan the teamLab Borderless. As the name suggest, some of the exhibits are not confined to their respective rooms as they transition from one to another seamlessly. It has an exhibition of 10,000 square meters space; where they use technology to create an experience that stimulate all the human senses. In total, there are 50 exhibits spread across the vast space. All the exhibits are interactive: the visitors are encouraged to touch, follow, disrupt or add to them. None of these video/digital artworks are played on loop, either. They are all original, organic movements that are dependent on the audience participation.

3.3.3. USA

3.3.3.1. *ARTECHOUSE*

ARTECHOUSE is a three-level digital art immersion with over 1,000 square meters exhibition, located in Washington and open since June 2017. It displays large-scale installations produced by artists who are merging arts and technology to connect audiences of all ages to the arts and stimulate interest in the limitless possibilities of technology, science and creativity. In ARTECHOUSE, art has no limits and many of its experiences are interactive and immersive, inviting visitors to become a part of the art. This innovative project welcomed over 400,000 visitors since its opening and has captivated a global audience making headlines in numerous international media outlets as the premier contemporary art space.

4. Reference Framework and Methodology

The methodology of this project would be content analysis technique, especially on a qualitative and quantitative analysis of online content. The business plan will present the following structure:

- **Mediate Environmental Analysis** – it identifies the external constraints that could have an impact on the organization, analysing the political, economic, social and technological context of Portugal through PESTAL model.

- **Market Analysis** – it includes the analysis of the offer and demand side of the touristic industry in Portugal.

- **Competition Analysis** – it identifies and characterizes the direct and indirect competitors of the sensorial museum.

- **Immediate Environmental Analysis** – it analyses the tourism industry context in Portugal, with a special emphasis in Lisbon, through Porter's five forces model.

- **Internal Analysis** – development of a systematic SWOT analysis based on the environment analysis and considering the strategic position of the museum.

- **Segmentation, Target and Positioning** – it defines the specific characteristics of the targeted customers of the museum and the positioning in the local market, considering the expectation of customers and the existent competition.

- **Marketing Policy** – it defines the marketing plan which includes the key variables product, price, promotion and distribution to be applied by the museum.

- **Organization** – it defines the organizational structure that suits the characteristics of the museum, including the human resources needs for the organization.

- **Implementation** – definition of the execution program for the project.

- **Technical Features** – it identifies several key elements to be considered in the development of the exposition unit: size, location, technology and equipment.

- **Economic and Financial Evaluation** – it evaluates the proposed business plan using the appropriate methodologies and valuation criteria.

- **Decision** – a final decision will be taken based on the viability of the project.

5. Mediate Environmental Analysis

5.1. External Analysis – PESTLE Analysis

The mediate environmental analysis is crucial to identify and analyse the external constraints that have direct impact on the business' environment. It is important to notice that any market player does not have control on these constraints and any fluctuation on one of them will have an impact on the others. To analyse all constraints, we use the PESTLE Analysis that categorizes the analysis in the following factors: Political-Legal, Economic, Socio-Cultural, Technological and Environmental.

5.1.1. Political-legal Analysis

The analysis of the political environment provides the political framework that has impact in the Portuguese tourism industry, which in turn influences the museum's business plan and the way it will be projected.

- *Tourism Policy*

The growing importance of the tourism industry over last years led to the need to create guiding principles to regulate the tourism in Portugal. The PENT was firstly approved in 2007 by the *Resolução do Conselho de Ministros* 53/2007 of April 4th and gained legal importance in 2009, through the *Decreto-Lei* 191/2009 of August 17th. It was a stable reference framework of tourism activity and it defined the tools and strategies for its execution during the period between 2006 and 2015. To achieve more accurately its objectives, this plan was revised and adapted, over the years, according to environment changes (*Turismo de Portugal*, 2007). The final balance of PENT in 2017 was positive and proves that it was worthwhile to have a strategy for the tourism industry. It resulted on the implementation of eleven projects across five strategic areas: territory, destinations and products, brand and markets, resources qualification, distribution and sales and innovation and knowledge.

When the PENT expired in 2015, it was replaced by a new plan named *Turismo 2020* to help turn tourism the main economic activity in Portugal. The main objective of this plan was for Portugal to become the European destination with the greater touristic growth supported by a competitive and diverse touristic offer (*Turismo de Portugal*, 2015a).

In 2017, *Estratégia Turismo 2027* replaced *Turismo 2020* to work as a reference for tourism in Portugal in the decade 2017-2027 (*Turismo de Portugal*, 2017). This strategy,

approved by the *Resolução do Conselho de Ministros* 134/2017, focus on assets that ensure at the sustainability and competitiveness of the Portugal, aiming to:

- o Ensure stability in the major priorities for national tourism until 2027;
- o Promote the integration of sectorial policies;
- o Generate a continuous articulation between the various agents of tourism;
- o Give strategic direction to investment options.

Several public incentive systems for tourism activities were created such as QREN (2014-2020) and JESSICA, currently in progress. It is also important to mention the program Portugal 2020, established between Portugal and the European Commission, that provides funds to finance projects that have impact on the economic, social and territorial progress of Portugal.

Moreover, Portugal has a national touristic authority, *Turismo de Portugal*, which is responsible for the support, value creation, promotion and sustainable growth of the touristic activity, aiming to contribute to the economic and social development of the country. Additionally, there are other entities that contribute to similar purpose like the Regional Tourism entities, the Regional Agencies of Tourism Promotion, the Regional Directorates of Tourism in Madeira and Azores and the Tourism Teams Abroad (*Turismo de Portugal*).

It is also important to take into account the legislation for Tourism Animation Agents that was regulated by *Decreto-Lei* n.º 108/2009 of May 15th, modified by *Decreto-Lei* n.º 95/2013 of July 19th and by *Decreto-Lei* n.º 186/2015 of May 3rd. In order to develop activities of tourist animation, with commercial character, it is necessary to be registered in the National Registry of Agents of Tourism Animation (RNAAT). RNAAT is part of the National Tourism Registry (RNT) and is an electronic platform that gathers and makes available information about tourism companies operating in Portugal (*Turismo de Portugal*). Tourism companies must have a complaints book. The competent authority for the handling of complaints is the Food and Economic Security Authority (ASAE).

Regarding compulsory insurance coverage, it is regulated by *Decreto-Lei* n.º 108/2009 of 5th May, which establishes the conditions for access and exercise of business activity of tourism animation. In addition, in terms of legislation the *Decreto-Lei* n.º 186/2015 of September 3rd is the more recent wording of the legal regime that establishes the conditions for access and exercise of the activity of tourist animation companies and maritime tourism operators (*Turismo de Portugal*).

- *Portuguese Tax*

The tax system in Portugal is under control of *Direção Geral dos Impostos*, which is responsible for a number of general taxes that must be paid by residents and in some case by non-residents. The main taxes are:

- o *Personal Income Tax* (IRS) – it is applied to all types of income earned by individuals resident in Portugal. According the Portuguese Personal Income Tax Code (CIRS), the tax rates are progressive ranging from 14.50% up to 48% (AT, 2019).

- o *Corporate Tax* (IRC) – it is levied on the income of companies operating in Portugal being regulated by the Corporate Tax Code (CIRC). The standard corporate income rate is 21% to which may be added the a municipal tax (*Derrama Municipal*) up to 1.50% levied on taxable profits depending on the municipality of the activities, as well as a state additional tax (*Derrama Estadual*) between 3.00% and 9.00% on taxable profits (AT, 2019).

- o *Value Added Tax* – VAT (IVA) – is added to the price of products, services, imports and commercial transactions. It is charged to every buyer, independently of being resident or non-resident. There are three levels of VAT for Continental Portugal, Madeira and Azores due for different goods and services, namely: general VAT (23% in Continental Portugal; 22% in Madeira and 18% in Azores), Intermediate VAT (13% in Continental Portugal; 12% in Madeira and 9% in Azores) and reduced VAT (6% in Continental Portugal; 5% in Madeira and 4% in Azores) that are available in the Value Added Tax Code (CIVA) (AT, 2019).

- o *Local Property Taxes* (IMI) – is a tax that is levied on the net worth of buildings (rustic, urban or mixed) located in Portugal. It is a municipal tax, whose amount is between 0.30% and 0.80% (per year) of the estimated value of the property, as we can verify in the Local Property Tax Code (CIMI) (AT, 2019).

These tax codes can be found on the website of the Tax Authority and Customs (AT).

- *Social Security in Portugal*

There is a mandatory social security charge over the salary of each employee that must be paid, both by the employer and by the employee. The amounts of social security contributions in Portugal vary according to the type of work performed. Employees pay monthly 11% of their salaries to the General Social Security regime and the companies have to pay 23.75% for each employee (*Segurança Social*).

- *Public Programs for Supporting the Arts*

Over the last years, the Ministry of Culture has been developing different programs designed to support the creation, production and broadcasting of different programs of art, as well as the management and promotion of cultural infrastructures. This public investment assumes many forms, according to the activities being undertaken and their objectives:

  o *Direct Support*: the main objective is to invest in organizations dedicated to the creation and/or organization of activities in the Portuguese territory.

  o *Indirect Support*: Partnerships are developed between the Ministry of Culture and local administrations or between local administrations and organizations dedicated to creating and/or organizing activities. These former entities to become eligible for receiving such investment must develop and present together a project proposal to the Ministry of Culture.

  o *Internationalization of the Arts*: public investment is conceded to support artistic projects being developed outside Portugal by organizations dedicated to creating and/or organizing activities, as well as informal groups or single persons whose fiscal residence and main country of activity continues to be in Portugal.

- *Increasing Support of Culture Made by Local Administrations*

Over last years, Portuguese cities have been constantly investing in culture as a strategy for regional, local and urban development. The cultural resources are used for promoting regional identity, leverage competitiveness and attracting visitors and new residents. The Lisbon City Council allocates financial support to initiatives and investments in the field of culture of municipal interest. As a rule, the amount of support may cover up to 60% of the total cost of the initiative or investment (CML, 2018).

It is important to mention the work carried out by EGEAC in the management of some of Lisbon's most emblematic cultural spaces and the realization of cultural moments of reference of the city. For more than 20 years this municipal body has been promoting, preserving and revitalizing the cultural activity of Lisbon. As a privileged interventionist in the Portuguese's capital, EGEAC ensures multidisciplinary, comprehensive, inclusive and democratic programming, seeking to be an active and receptive agent, acting both in the cultural sphere and in the most popular.

5.1.2. Economic Analysis

The economic analysis allows to gather information about the opportunities and threats driven by the economic sectors, as well to understand the actual status of the purchasing power of the population. We consider in our analysis the following indicators: GDP and GDP per capita, Gross National Disposable Income per Capita (PPP), Inflation Rate, Exchange Rate, Interest Rate and Unemployment Rate. As the majority of the tourism facilities are used by foreigners, it is necessary to take into account the economic context of the main countries where they come from (INE, 2018). According to the available data, the more relevant nationalities of the inbound tourists are: France, Spain, Brazil, Germany and USA (WTTC, 2018).

- *GDP and GDP per Capita*

GDP is the most commonly used measure of economic activity and serves as a good indicator to track the economic health of a country. Conceptually, it is defined as the total market value of all final goods and services produced within a country for a year. It includes private and public consumption, private and public investment and export less imports. Deriving from a straightforward division of total GDP by the population we obtain GDP per capita. GDP per capita is an important indicator of economic performance and a useful unit to make cross-country of average living standards and economic wellbeing.

The Portuguese GDP growth rate has been negative since 2009, which was the first year of four years of economic contraction within five years. The recovery period following 2012 was characterized by a continued increase in the share of exports in GDP, a trend that extended to all components, especially tourism which recorded the highest accumulated growth. Growing since 2014, the Portuguese's GDP grew significantly in 2017 when it recorded the highest growth since 2009 (Annex 7).

According to BdP, the Portuguese economy is expected to continue a growth trajectory of activity, albeit in a deceleration over the 2018-2021 horizon, in line with projections for the same period established for the euro area accounted by the ECB (BdP, 2019). European Commission predicts a growth of 1.80% of GDP in 2019, 1.70% to 2020 and 1.60% in 2021 (European Commission).

In terms of GDP per capita, Portugal experienced a similar evolution than the previous indicator, increasing since 2012 (Annex 8).

Regarding the European principal countries where tourists are from, there was also a decrease in the GDP growth rate until 2009, with most of the countries recovering in the following years. In 2018, the real GDP growth rate was +1.72% in France, +2.58% in Spain

and +1.43% in Germany. Apart from France, the Eurostat forecasts that the growth rate of this economic indicator is decreasing over the next few years. However, in France this growth will remain constant. Relative to GDP per capita, the European countries studied presented an evolution like the one observed in Portugal recovering since 2015 (Annex 7).In Brazil, the GDP practically increased over the years until 2014, since then this indicator has declined and only start to recovery in 2017. In 2018, the real GP growth rate was +1.12% (Annex 7). The US GDP growth rate registered a declining trend for several years to reach the lowest one by 2009 when the economic crisis started. By 2010, the US GDP growth rate start the recovery and by 2018 it was +2.86% (Annex 7).

- *Gross National Disposable Income per Capita (PPP)*

Gross national disposable income is the sum of the gross disposable incomes of the institutional sectors. The gross national disposable income per capita represents the income that a person has available to use in consumption or in savings in a determined country, assuming the incomes are distributed equitably (Eurostat). Regarding the studied countries, USA, Germany and France presented the highest PPP values: $62,517, $52,896 and $45,601, respectively, in 2018. On the other hand, Spain, Portugal and Brazil presented the smallest PPP values: $40,371, $30,487 and $16,111 (Annex 9).

- *Inflation*

Since 2014, the prices in Portugal have exhibited a small annual increase. The inflation rate (average annual change in the consumer price index) was +1.37% in 2017, up from previous years (+0.76% in 2016 and +0.81% in 2015) (INE, 2018). Banco de Portugal predicts a moderate increase in the inflation rates for the following years, more specifically it will grow 1.40% in 2019 and 1.50% in 2020 (BdP, 2019). Considering the countries under analysis, only Brazil registered a decline in the inflation rate, while the remainder presented a growth in the inflation rate until 2016. The inflation rates of that countries are 1.85% in France, 1.68% in Spain, 3.66% in Brazil, 1.73% in Germany and 2.44% in USA. The forecasts of the inflation rate for all countries analysed are that it will be declining in the following years (Annex 10).

- *Exchange Rate*

In spite of majority of countries of this study using Euro (EUR) as their currency it is necessary to analyse the evolution of the exchange rate of the EUR against BRL and USD, because the importance of Brazil and USA in the tourist flows. When it comes to the evolution of these exchange rates, there were observed some oscillations mainly due the economical

conjuncture, with the EUR to devaluating against USD since 2015, making Portugal a more appealing and inexpensive destination for the visitors that came from the countries of that region (Annex 11). On the contrary, despite the oscillations, the EUR value has increased against the GBP and the BRL along the years under study (Annex 12).

- *Interest Rate*

Relative to the reference interest rates by the ECB, they decreased since 2008, being settled near to zero the fixes for main refinancing operations in 2018 and for deposit facilities by the Governing Council (ECB) (Annex 13).

- *Unemployment Rate*

In Portugal, the unemployment rate increased continuously between 2008 and 2013, reaching the highest rate of 17.50% due to the financial crisis of 2008 and later to the intervention in Portugal of the IMF, EU and ECB to implement an aid financial program with hard measures causing a severe economic recession. In 2014, the unemployment rate start decreasing to achieve 6.50% in 2018 (INE). After a very dynamic growth in 2018, employment should resume an evolution more in line with its historical relation with the activity (BdP, 2019), which will allow the continuation of a downward trajectory of the unemployment rate, although more than in recent years (Annex 14).

5.1.3. Socio-Cultural Analysis

The analysis of the sociocultural environment identifies the values, customs and tradition of Portuguese society during a period of time. These indicators influence the market, impacting on the performance of the museum.

- *Evolution of the Population*

In terms of evolution of the population, Portugal presented positive growth rates for several years until 2010. Since then this rate has been negative and was gradually decreasing until 2018. In 2018, Portugal had 10,283.80 inhabitants, corresponding to a decrease of 0.16% when compared to the previous year. This decline can mainly be due to the decrease in crude birth rate as well by the migratory balance (Annex 15, 16 and 17). Regarding to the other studied countries, Spain presented positive growth rates of population until 2012, presenting negative rates since then. By contrast, in Germany the growth rate was negative until 2013 and positive since then. France, Brazil and USA have presented an almost constant growth over the years (Annex 15).

- *Distribution of the Population*

Population ageing is even pointed out as one of the greatest demographic trends of the 21st century. Portugal, as in almost European countries, has suffered significant changes in terms of age distribution over the last decades (Annex 19). The relative weight of the older population will keep growing because of the increased longevity (Annex 18), as well as the decreased fertility. Finally, when it comes to the regarding studied countries they also present a similar aging trend, with the exception of Brazil (Annex 19).

- *Lifestyle Evolution*

The lifestyles have seen some changes that consequently influence the tourism activity. These changes foster the motivation to travel and even to enjoy free-time which impacts the tourist demand. One of the main reasons for travel, even depending on the cultural, economic and social background, is increasingly the satisfaction of a specific pleasure or experience. Moreover, we can highlight the following lifestyle changes with impact on tourism:
  - Trend to enjoy free-time to travel and to combine business travels with leisure, increasing the practise of tourism activities;
  - Increased levels of education, training and information, that helps to extend new horizons, increases the interest in certain types of activities and new territories as well as impacts on new needs;
  - Improving accessibility, contributing gradually for faster, cheaper and more convenient movements, increasing the number of short trips and potentiating the concepts of city break and internal tourism.

5.1.4. Technological Analysis

The technology heavily influences almost all science fields, being the variable that changes more quickly and may change the structure and the business model of the organization. In fact, technological factors can give competitive advantages to the company, as well as, reduction of operational costs, improvement and innovation of the offered products or services, benefiting costumers and the environment.

- *Growing Importance of Internet as Channel of Communication, Information and Commercialization*

The internet is the primary driver of the global economy and our primary mode of communication. Across industries and beyond borders, the reach of the internet develops and

builds businesses and personal connections. Mobile devices have helped with the proliferation of the access. When the internet became a viable marketing communications channel, it levelled the playing field for smaller businesses to compete in a much larger market. Nowadays, we can reach our ideal customer in a bigger geography and in more ways for a much smaller cost.

- *Progressive Democratization of Access to Culture Based on Access to Online Content*

Businesses need to interact with their customers to show them that there are real people behind their product/service that care about the people buying it. There is no other platform that offers the same level of customer engagement than online content. Nowadays, companies can build communities, interact with their customers in real-time, answer questions and complaints and post regular updates. Companies can reach out to their customers in several different ways. They can appeal to customers through blog posts, infographics, videos and games through networks such as Facebook, Pinterest, Instagram and other platforms across the web. For those who are using social media, it is important to monitor trends and look at analytics reports closely to determine whether the strategy is working.

- *Widespread Use of Social Media*

Social media includes many channels of communication which are the most powerful and the best way to increase the conversation about the business. Social media is part of everyone's daily routine and nearly 90% of businesses are using social media actively to promote their products/services. Social media is one of the most efficient forms of marketing nowadays and most businesses must have a presence across some of the major networks to be perceived as a legitimate company. Continuous communication with the customers is necessary and we'll have to make sure that we are aware of all the positive and negative feedbacks about our brand.

5.1.5. Environmental Analysis

The environmental analysis is related not only to environmental issues as there are others external factors that may influence the nature of the industry, like the management style and environmental regulations.

- *Increase of Norms of Environmental Regulation*

According to the report *Turismo 2020*, climate changes have impacted the tourism activities. In Portugal, the tourism flows are changing, increasing the demand for the low season. In this sense, people are increasingly concerned with environmental issues, so they start

to adopt fuels and energy environmentally friendly and search for natural and biological products. As the environmental framework has an increased importance in the customer purchase decision, the tourism industry needs to adapt its practises and management strategies to the environmental issues (*Turismo de Portugal*, 2015b). Simultaneously, over last years the governments and international organizations have defined environmental regulatory standards and certification and the national tourism authorities have increased the monitoring of the environmental practises of tourism companies.

6. Market Analysis

This business plan consists in the creation of a sensorial museum, so it is crucial to consider the context in which it is going to be developed and analyse the entertainment market in Lisbon. We start to make a general framework of the touristic sector in Lisbon and after we describe the evolution of the demand and the supply that is available to the market segment we want to achieve.

6.1. General Framework

The tourism in Lisbon has achieved historical results, with impact on the creation of new businesses related to the sector over the last years. The cultural heritage of Lisbon, besides being rich, is diversified and in constantly change. Nowadays, the main difficulty of Lisbon's visitors is the process of choosing the touristic activities given the wide range of entertainment experiences offered. The offer of Lisbon has diversified and evolved in such a way that is currently prepared to receive all kinds of tourists. It stands out from the other cities for its offer of excellence in all segments with emphasis on good accessibility, quality accommodation, mild climate throughout the year and safety (*Turismo de Portugal*).

6.2. Market Dimension

6.2.1. Demand

To qualify the demand, it is important to analyse the motivations and the behaviours of the visitors of Lisbon, focusing in the present but also in the future. In this sense, we used the Motivational Survey of Lisbon of 2017 (*Observatório do Turismo de Lisboa*).

The vast majority of the visitors travelled to Lisbon with a leisure purpose (75.60%), followed by professional reasons (21.00%). In terms of foreigner guests, 89.30% of them visited Lisbon for the former reason and 9.90% for the second one. While, 58.20% of the national guests visit Lisbon for professional reasons and 30.00% came to Lisbon in leisure (Annex 20).

City and short breaks are the main reason for visiting Lisbon, with 67.90% of the total, followed by private business (10.80%) and MICE (9.30%) (Annex 20). Overall, the average stay in Lisbon is around four nights, which depends on the motivation of the visit (in the leisure segment is 4 nights and for business segment it is 3 nights) (Annex 20).

Most Lisbon's visitors organize their travel by themselves (70.20%), due to the greater percentage of visitors with leisure motivations. Only business visitors (18.90%) have their trips

arranged by their employer (Annex 20). The use of Internet is essential for Lisbon's visitors, 67.80% of them used it to reserve accommodation and 55.90% to book transport. There is a greater use of the Internet by leisure visitors compared to other motivations (Annex 20).

The most chosen means of transportation to reach Lisbon is air travel (Annex 20). Analysing the airport movements, Lisbon airport recorded the highest passenger traffic compared to the other airports in Portugal. In 2018, it recorded a total of 27.42 million passengers, which represents an increase of 7.30% comparing to the previous year (Annex 21). Being that 52.50% of the passengers had as origin/destination the airport of Lisbon (*Turismo de Portugal*). Cruise tourism is gaining increasing importance in Lisbon, which is again at the top compared to the remaining ports in Portugal, reaching a total of 522,501 passengers in 2016 (INE, 2018: 23) (Annex 22).

Relatively to the demand for hotels and similar establishments, Lisbon is the second Portuguese region, only after Algarve that received more guests during 2017. It totalized 16,695 thousand overnight stays during 2017, which almost 80% were from external market, principally from France, Spain, Brazil and USA (INE, 2018: 64). The room occupation rate in the Metropolitan Area of Lisbon is the highest in Portugal, achieving 71.20% in 2017 (*Turismo de Portugal*). This indicator shows that Lisbon is a seasonable destine, with the room occupation rate being higher between June and September than in the other months due to the holiday season.

During 2017, the visitors of Lisbon spent daily €133.65 (minus 5.60% than in the previous year), which, by applying the average stay correspond to an average individual cost in Lisbon of € 651.94 (minus 4.70%). The average daily spending is higher for business tourists (€197.33 – growth of 22.00% over 2016) than the leisure spending (€108.27 – reduction of 21.20% comparing to 2016). The business segment also had an average cost of overtime, €726.77 comparing €568.63 in leisure (Annex 20).

The increasing flow of tourists in Lisbon over last years has positively impacted the number of people visiting museums and other cultural establishments. In this analysis, we considered the revenues of the entities managing cultural equipment (such as EGEAC and other private entities) weighted by the number of visitors. In terms of cultural facilities, Lisbon is the Portuguese region that concentrates more cultural equipment.

The Strategic Plan of Lisbon Tourism sets out a new ambition for 2019, Lisbon achieves 20 million of overnight stays and earnings of €800 million with improved satisfaction (*Turismo de Lisboa*, 2015: 67). The announcement of the opening of the new Lisbon's airport

in Montijo, during 2022, reinforces these statistics. For the first year of operation, the new airport will receive seven million passengers, but it could quickly reach fifteen million.

6.2.2. Supply

Due to its history, Lisbon city has naturally gathered several artistic collections, historical pieces and other artefacts that make it worth visiting in its several museums. After an irregular behaviour until 2015, the Tourism Animation sector consolidated its dynamism, presenting an average annual growth rate approximately 35.50% in the period between 2015 and 2017, achieving a total of 6.167 agents in Lisbon. This growth has mainly contributed to a significant increase of the number of entities registered in the Registry of Tourism Animation Agents (RNAAT), between 2015 and 2017, an additional 1,973 entities were recorded in the RNAAT only in the Lisbon Region (Deloitte, 2019).

The supply reflects the number of museums and other cultural establishments which are available in the Metropolitan Area of Lisbon, totalizing 85 cultural entertainment establishments, in 2017(Annex 23). Of the total of these cultural facilities, 43 are museums (CML, 2012: 22).

It is important to note that the evolution has been positive over last years, with an average net increase of almost two new establishments every year since 2000. The museums in Lisbon welcomed around 4.52 million visitors during 2017 (Annex 24), which more than half were foreign tourists (CML, 2012: 22).

7. Competition Analysis

To carry out the Competition Analysis, we defined the differentiation criteria in the cultural tourism sector and, then, we analyse and compared its importance for the industry. The factors that most impact the choice of a cultural experience by visitors of Lisbon are:

- **Location**: the good accessibility of the cultural establishment is a decisive factor in consumer choice, given the proximity to public transport networks as well as other means of transport enables more people to visit.

- **Interaction with Customers**: is crucial, primarily over the Internet, because people can access a lot of information about the cultural establishment before visiting it and thus choose the experience they will have based on the entitlement information and customer's feedbacks. This interaction is beneficial if it is maintained during the visit to the chosen experience.

- **Quality** of Innovative Features: the bet on differentiation should be based on the quality of the cultural experience offered to build customer loyalty relation and thus reach new people due to word-of-mouth.

The establishments that resemble the proposed sensorial museum are those that can be classified as touristic entertainment services that value the interaction with its visitors located in Lisbon. In this market segment, it is important to ensure an easy and convenient access to several areas of interest in the city centre of Lisbon.

Now, it is important to identify the competitors and group them into two groups, the first level will be direct competition (i.e., those with the same characteristics as the sensorial museum) and the remaining market players will be part of the second level.

As the concept of this sensorial museum is quite innovative, it becomes difficult to find its direct competition because there is no cultural establishment in Lisbon with the same characteristics. However, and to complete our analysis, we identify as direct competition the "Lisbon Story Centre – Memories of the City", a museum which tells the story of Lisbon through models and multimedia displays. In this way, the secondary competitors encompass the remaining tourist attractions in Lisbon.

In the Annex 25, we can find the classification of the touristic-cultural establishments of Lisbon by the two levels of competition.

7.1. Direct Competition

7.1.1. Lisbon Story Centre – Memories of the City

Despite some artistic and technical differences, the concept of the "Lisbon Story Centre" is the one that most resembles the one intended for the projected sensorial museum. Both aim to offer a very interactive and educational cultural experience. Therefore, we decided to select the "Lisbon Story Centre" as the direct competitor of the sensorial museum.

At "Lisbon Story Centre", the visitor will travel back in time as if walking through a picture book brought to life. Through the use of scenography, multimedia and sensory experiences, dramatic reports of the main events of the city of Lisbon are presented, exploring myths and realities of this millenary city. In a playful and interactive way, while respecting the historical truth that a city with the past of Lisbon deserves, the Centre offers the visitors approximately one hour of a journey in time and space. One of the high points of this cultural establishment is the 1755 Earthquake of Lisbon presented in a theatre of immersive experience.

On the ground floor, "Lisbon Story Centre" is based on the five main areas that make up the exhibition. Each story focuses on different aspects of Lisbon's history, structured in a chronological sequence in which visitors are on an engaging tour. The sixth area is counted on the first floor, where is the virtual model of the city of Lisbon, and where it explores the architecture of the city and provides the most detailed discovery of its history, encouraging its discovery today. In addition, a temporary exhibition area with themes alluding to the areas covered can also be visited.

8. Immediate Environmental Analysis

8.1. Porter's Five Forces Analysis

The Porter's Five Forces Analysis is a framework that studies the attractiveness of an industry, determining the intensity of its competition and the level of profitability through the joint of five forces: bargaining power of the buyers, bargaining power of the suppliers, competition rivalry, threat of new competition and thereat of substitutes (Porter, 2008).

8.1.1. Bargaining Power of the Buyers

The attractiveness of an industry can be influenced by customers, as their requirements and needs may affect the conditions under which the products/services are acquired. Thus, the profitability will be lower the higher the bargaining power of the clients (Porter, 2008).

The sensorial museum has two main types of clients, which can be classified as educational group (schools, universities and other educational institutions) and individual customers (which encompasses the local audience and the tourists).

The educational group normally represent a major source of revenue for museums. So, it is important to adapt our services so that the expectations of this group are fully satisfied. Therefore, we can verify that this group has great negotiating power. Regarding the individual customers, they can choose an entertainment experience over another, since there are many alternatives in this industry and it is easier to compare quality and prices of the offered services of a cultural establishment before visiting them, through the ease access to information and customers' opinions on the internet.

As the entertainment services are very differentiated, the quality of the services offered and the reviews of the visitors has been more relevant in the customer purchasing decision. The demand is higher than the supply, so the influence of the customers on the industry is low and we can conclude that the bargaining power of the customers on this industry is lower.

8.1.2. Bargaining Power of the Suppliers

The suppliers also may affect the competitive environment of an industry, influencing the terms under the products/services are sold. Strong suppliers can pressure buyers by raising prices, lowering product quality and reducing product availability. Thus, higher supplier power the higher impact and influence on the business and on its policies (Porter, 2008).

The suppliers of technological equipment play a central role in this project, since the whole concept of this museum is technology-based. The technologic equipment needed to open

and maintain the museum is available in the market, existing many competitive suppliers which decreases their bargaining power. Relatively to the products/services associated to the exploration of the museum (outsourcing services) the offer is wide. Normally, these products/services have little differences and are offered by different companies, so its suppliers have low influence on this industry. The suppliers of energy and water until few years ago have a high bargaining power, since they hold the monopoly of these relevant facilities. However, these suppliers have begun to lose some of their bargaining power as new companies providing identical goods are emerging. To complete our analysis relatively to the suppliers, it is important to analyse the financing of the project. Although scarce, this resource holds great importance in all investment projects. After the crisis of 2008, the banks restricted their policy, which makes it difficult to access to foreign capital. Since then we have been in a period of economic prosperity and as result the banks are grating more credit. So, investors and lenders have a high power in this industry.

Therefore, the suppliers in this industry have a lower bargaining power, increasing the attractiveness of the industry.

8.1.3. Rivalry Among Existing Firms

The rivalry refers to the degree to which firms respond to competitive moves of the other firms in the industry. It analyses the competitive intensity in the industry allowing a better understanding on how significant the competitors are and how they operate in this market (Porter, 2008). The industry rivalry is affected by the structural factors as concentration, diversity, product differentiation, excess capacity and exit barriers.

In terms of dimension, the cultural entertainment industry in Lisbon is fragmented, since there are many cultural establishments with small market shares which dispute the profitability of the sector. So, we can say that this industry does not present a concentration of supply.

Lisbon present a rich touristic offer, with cultural experiences for the most diverse interests of its visitors. In fact, the cultural establishments are in constant innovation and improvement of their services to differentiate their offer from the others. Each cultural establishment provides the basic services to entertain the visitor, adding some unique features in its services to achieve customer's expectations. Despite being a fragmented industry, services offered are highly diversified which contributes to an increased rivalry among existing businesses.

A company creates excess capacity when it is producing at a lower than projected production scale, it creates excess capacity. The tourism market in Lisbon does not have excess capacity, by the contrary, the demand for entertainment products and services is much higher than the existing supply.

It is important to analyse the existence of exit barriers, since the higher they are more intense will be the rivalry among competitors. The companies in this industry held durable assets, however its residual value is very low. As a consequence, the rivalry among industry competitors diminishes.

Therefore, the rivalry among competitors is high which decreases the attractiveness of the business.

8.1.4. Threat of New Competition

The threat of new entrants influences significantly the ability of current companies to generate a profit. When new competitors enter in the market offering the same products/services, a company's competitive position will be at risk. The threat of new entrants depends on the barriers to entry, which refers to the existence of high costs or obstacles that can deter new competitors from entering the industry (Porter, 2008).

The most significant entrance barrier into the cultural entertainment industry in Lisbon is the high initial investment cost. It is essential to find a good location in Lisbon at an affordable price, without forgetting the capital investment in the requalification and the operationalization of the museum. The Portuguese Government offers diverse public incentive programs that have been created to invigorate the tourism sector, supporting and financing new ideas and projects.

Therefore, the threat of new competition is high, which means that is difficult for a new player to enter the cultural entertainment industry in Lisbon.

8.1.5. Threat of Substitutes

The threat of substitute may affect the profitability of an industry because consumers can choose to purchase the substitute instead of the industry's product. The availability of close substitute products can make an industry more competitive and decrease profit potential for the firms in the industry (Porter, 2008).

There are many substitutes to be considered in Lisbon as an alternative of choosing a cultural entertainment experience, like historical museums and monuments. However, the cultural experiences are increasingly in the top of the preferences of visitors. Despite this variety, the threat of substitutes has no major impact on the projected museum activity as it

offers an innovative video-mapping service and the visitors of Lisbon are looking for unique experiences during their trips. So, we can conclude that the threat of substitutes is low, which increases the attractiveness of this industry.

9. Internal Analysis

9.1. SWOT Analysis

The SWOT analysis is an important tool for strategic planning that consists of collecting important data that characterizes the internal environment (strengths and weaknesses) as well as the external environment (opportunities and threats) of the company. This analysis is the basis of management and strategic planning in a company, since it is essential for successful planning the future strategies for any business.

Systemic SWOT Matrix		Strengths			Weaknesses	
		Central Location	Innovative Immersive Experience	Use of Latest Technology	Lack of Notoriety and Awareness	Central Location
Opportunities	Incentives for New Touristic Investments	The incentives of public institutions for creating innovative cultural establishments are important to support this project technology based, which has a constant need of investment.				-
	Increasing Promotion of Culture Made by Local Administration of Lisbon	The partnerships with Local Administration of Lisbon are a good source for promoting the museum, giving credibility to our activity and reaching a wider audience. Simultaneously, it is possible to develop technical support partnerships that aim at the maintenance of the museum.				-
	High Growth of Touristic Sector in Lisbon	Importance of the proximity to the city centre and its touristic and business points of interest.	The customers are seeking for unique experiences, being the technology based museum is the perfect advantage to capture their visit. Another innovative component of this project is that customers can interact with our exhibits through their smartphones.		-	-
Threats	Difficulty in Finding a Space in Lisbon at Competitive Price	It has a lot of impact on any business, as it is crucial to find a central location for the lowest possible investment.				-
	High number of competitors	The competitors known the industry and the behaviours of the competition and the measures to take to combat the entrance of new competitors.			Clients are more informed which makes the lack of notoriety to have a huge impact in their choice of cultural experience.	If the museum uses outdated technology, as customers are more informed they will opt for other experiences that the competition offers.
	More informed customers	The easy access to information makes the process of choosing of customers more conscious, so the museum needs to implement a closer communication policy, principally on the Internet, to announce our exclusive exhibitions and its unique technological features.				

Figure 1 - Systemic SWOT Matrix

10. Development of Strategy

10.1. Mission, Vision and Values

Outlining a company's mission, vision and values is critical for a business creation, organization and development. In this way, it becomes possible to strategically plan, guide human resources and create ties with clients.

- **Mission**: Ensure the excellence of the museum's creative content, maximizing the immersive experience of our customers.
- **Vision**: Be the market leader of cultural entertainment experiences in Lisbon, being a reference of the immersive ones.
- **Values**:
  - *Quality*: Offer a good service with the adequate creative and technological resources.
  - *Respect*: Respect the environment of the museum, treating co-workers and visitors accurately and having a sustainable behaviour to the society.
  - *Loyalty*: Create a mutual trust relationship with museum's visitors and shareholders.

10.2. Competitive Advantages

The competitive advantages are the result of the museum's ability to neutralize or diminish the action of competition in the market segment in which it operates through differentiation. The museum has the following competitive advantages:

- **Creative and Innovative Service**: the museum stands out from the competition for the innovative video mapping service it offers to its customers. The video-mapping combined with other technical components can create a completely immersive environment.
- **Quality**: is closely linked to the advantage mentioned above, as we aim to offer an innovative quality service to our visitors. The quality is mainly based on the human resources selected to be part of the creative team that will be responsible for the production and execution of our exhibitions.

- **Employee Motivation**: it is also a great advantage for the museum as the staff is motivated to achieve the museum's objectives. This has a major impact on business productivity as well as creating a good working environment.

10.3. Segmentation, Targeting and Value Offer

10.3.1. Segmentation

The public of a company is always heterogeneous. In this way, segmentation is one of the most efficient tools for companies to reach their target audience. It consists in the process of dividing the market of potential customers into different groups and segments based on certain characteristics. With this purpose, we select the following factors to segment the consumer market:

- Demographic Criteria: Age.
- Geographic Criteria: Nationally.
- Social Criteria: Educational status.
- Behavioural Criteria: Motivation and other decision factors.

All these criteria are easily measurable, so it has great operational value. In this sense, we defined two distinct market segments:

- *Youth and Educational Group (Schools, Universities and Other Educational Institutions)*

The Youth and Educational Group is composed by the young people living in Lisbon, most of whom are studying in elementary, high school or university. Nowadays, the school groups are responsible for a large part of the visits of the museums in Lisbon, so they should play a prominent role in the definition of our strategy.

- *Individual Customers*

To detail the museum's performance in the segment of Individual Customers, we decided to make a division in our analysis between local customers and recreational tourists. The local customers are those who live in Lisbon, while the recreational tourists are all the people who are visiting the city of Lisbon.

   o *Local Customers*

The local customers are the visitors of the projected sensorial museum who live in Lisbon or in its Metropolitan Area with more than 25 years. According to Lisbon City Council, about 10% of the population residing in Lisbon is foreigner (CML, 2018). In terms of

qualifications, the majority of the population of Lisbon has the university degree. The local audience visits the museum mainly for leisure reasons, looking for unique entertainment experiences in their city of residence.

  o *Recreational Tourists*

The recreational tourists are all the visitors of Lisbon, whether they are nationals or foreigners. As the tourism facilities in Lisbon are mostly used by foreigners, it is essential to know the context of the countries where they came from. The visitors of Lisbon are mainly in the age group between 26 and 55 years. In aggregate terms, about 70% of visitors of Lisbon have high education qualifications. The majority of the tourists visit Lisbon for leisure reasons. In the Annex 20, we can find more information about the tourists that visit Lisbon, according to a satisfaction and motivational survey made by Turismo de Portugal in 2018.

10.3.2. Target

Based on the segmentation analysis, the sensorial museum will focus on two different targets, which are the Youth and Educational Group and the Individual Customers. Both targets are characterized in the following table:

Target	Youth and Educational Group	Individual Customers	
		Local Audience	Recreational Tourists
Demographic Criteria			
Age	8-25	25-70	25-55
Geographic Criteria			
Nationality	Mainly Nationals	Mainly Nationals	Mainly Foreigners
Social Criteria			
Academic Level	Mainly Students	University Degree	University Degree
Behavioural Criteria			
Motivation	Educational Purpose	Recreational Purpose	
Visit Companions	Mainly School Groups	Alone or Family/Friends	Alone or Family/Friends

Table 2 - Target

10.3.3. Positioning

The positioning involves defining how the target audience perceives the museum's image and its offered services. Its strategy is based on differentiation, since it focuses on offering an innovative entertainment touristic service in Lisbon. The museum will focus on highlighting the quality of the services its offers, betting on a unique immersive experience of video-mapping and other technological features.

11. Marketing Policies – Marketing Mix

11.1. Product

11.1.1. Offered Services

The highlight of the sensorial museum is the technological innovation of its exhibitions, a characteristic that is increasingly valued by tourists today. The museum will be equipped with the latest technology, which will transform our facilities in a virtual environment to appeal to the senses of our visitors. It offers an immersive experience through video mapping and other technological features.

The main purpose of the museum's exhibitions is to introduce Portugal to everyone who visit us. Our exhibitions will have content about the Portuguese history and traditions, with special emphasis on the city of Lisbon. At the museum's launch, there will be an exhibition that presents the history of Lisbon until today in a very creative and appealing way due to the technologies used. In parallel, another exhibition will be present with more detail the city of Lisbon nowadays. It will present the points of interest in the city, giving to our visitors a global view of Lisbon. The infinity. The content will consist of an anchor 15 minutes piece based on the history of Lisbon, a curation to present Lisbon today to fill out another 15 minutes and an mirror room. The mirror room runs parallel to the exhibitions; however its content is different as it is interactive with the visitors and designed in a glass-lined room.

It is important to note that the exhibitions can change whenever the museum has created new creative content to display. The customer satisfaction surveys will help us tailor the content of our exhibitions according to their feedbacks and preferences.

In the future, partnerships could be made with other existing sensorial museums around the world which enables the change of creative content. Thus, we will be able to present our exhibitions about Portugal abroad and receive in Lisbon exhibitions from international artists with diverse contents.

11.1.2. Brand, Colour Scheme and Logo

The brand should be well defined, so that the museum's services can be easily identified and differentiated from its competitors. The sensorial museum will be identified as *IMMERSIVUS* which is associated with an immersive entertainment experience.

The definition of a colour scheme for the museum is a key feature. The chosen colour will be orange, normally associated with creativity and enthusiasm. This colour is used to

stimulate the human senses, which helps the process of assimilating new ideas namely the assimilation of the innovative contents presented in the sensorial museum.

In the Annex 26, we present the logo of the sensorial museum. It consists in its name IMMERSIVUS written with a stylized letter in the orange colour.

11.2. Price

The definition of the entrance price of the museum is a critical phase for its success. The price should be defined taking into account the costs of the museum, the target that is aimed to achieve and the price the clients are willing to buy.

As the museum moves to a niche market, prices will be defined per the skimming strategy. The skimming strategy is to enter the market with a high price, in which only the most avid consumers are willing to buy. Given that the sensorial museum is an innovative product in the market, this strategy seems to be better suited to recover the investment quickly by maximizing profits while demand increases. Subsequently and in case of new competitors, the product loses its innovative character and the price will eventually fall.

Price must meet both the needs of consumers and the needs of the provider. With the objective to stimulate the activity of the museum, special prices will be made for young people, the elderly and even for group visitors (educational and tourism). More specifically, with four categories of tickets:

- "Bilhete Inteiro" for people over 12 years;
- "Bilhete Reduzido" for the residents in the Lisbon district, students, children between the ages of 6 and 12 and seniors over 65 years;
- "Bilhete Promo" for groups of visitors above 30 pax and partnerships with companies and tour operators as tourist agencies and companies like Odisseias and Sapo;
- "Bilhete Escola" for school groups.

The entrance prices of the sensorial museum are summarized in the Table 3:

Entrance Tickets	Price
"Bilhete Inteiro"	€15.00
"Bilhete Reduzido"	€12.00
"Bilhete Promo"	€10.00
"Bilhete Escola"	€7.00

Table 3 – IMMERSIVUS's Entrance Price

11.3. Place

The placement of the sensorial museum represents its booking system and its steady flow of visitors, for this central location is essential to facilitate make it as easy as possible for the customers to choose it. In order to make the museum available for the customer, we choose to use the following marketing channels:

- **Direct and Short Distribution Channel**

The museum sells directly to the customers through its own website or direct contact (as face-to-face, phone or via e-mail). This way, the museum can control the final price (that should be lower than the one available in the remaining distribution channels). Furthermore, the museum can avoid the payment of commissions, as well as its dependency on the touristic operators and travel agencies.

- **Indirect and Long Distribution Channel**

The distribution of the museum is also carried out through intermediaries, such as touristic operators. The touristic operators assemble touristic packages that usually include the entrances in entertainment touristic attractions and sell them to travel agencies. Therefore, they hire touristic attractions for a certain number of entrances and receive quantity discount, while travel agencies receive a commission from tour operators.

11.4. Promotion

The promotion aims to communicate the museum to its target audience, creating a customer relationship, while it begins to gain some notoriety in the market. At the start of activity, the museum will invest in significant and necessary means of communication. Given the market's response and not going into unnecessary costs, the communication strategy is adapting to potential future needs.

The museum will focus on the strategy of communication in the media, mainly through the Internet since it as an easy, fast and inexpensive way that is increasingly used nowadays to book cultural entertainment experiences.

Additionally, direct and relational marketing actions will be used in which the museum communicates directly with the client through personalized e-mails or newsletters, presenting new features of our exhibitions according to the clients' preferences. In this way, we can improve our services through the feedback of our customers.

Our clients share memories of their entertainment and holidays experiences with family, friends and colleagues. Word of mouth increases awareness about the museum with potential consumers.

The promotional actions of the museum are as follows:

Strategy	Promotional Actions	Main Goals	Benefits
Online Channel	**Own Website**	• Promote the museum; • Online ticket sales.	• Provide institutional information about the museum; • Control prices, booking and payment process.
	Travel Websites	• Promote the museum online; • Know the perceptions of the visitors.	• Free advertising; • Spread of word-of-mouth.
	Social Media	• Promote the museum; • Launch special campaigns for visitors.	• Easy and quick to communicate; • Direct and bilateral contact with clients and employees.
	E-mail Marketing	• Present and promote the museum; • Conduct personalized campaigns; • Conduct surveys to visitors.	• Allows to knowledge customer's needs and satisfaction.
Press	**Advertising in Industry Magazines**	• Promote the museum.	• Gain visibility in the market; • Spread of word-of-mouth.
	Articles in Online Newspapers	• Present and promote the museum.	• Spread of word-of-mouth.
Partnerships	**Communication and Technical Support Partnerships**	• Promote the museum; • Technical support in the sector.	• Gain visibility in the market; • Direct and bilateral contact with partners.

Table 4 – Promotional Actions of IMMERSIVUS

Source: Author

12. Location

To ensure the success of the projected museum, it is crucial to choose a good location in terms of centrality and convenience. So, the location appears as one of the most important components of this project. For this analysis it will be used the ELECTRE Method, which allows to compare and relate several criteria of the alternative places. Considering the factors selected, the ELECTRE Method determine the location of the most sustainable way for the investment, considering the weight given to the importance of each factor.

12.1. Macro Location

In a first phase, the Macro Location is defined, which consists in the choice of the city where the museum will be located. The cities of Lisbon and Oporto were selected for the analysis, since they are the two Portuguese cities that receive more visitors (national and international). Additionally, given the technical specificities of the museum, we will analyse the location hypothesis in Alentejo since this region has the necessary infrastructure for this project.

The factors considered as critical in the macro location of the museum are:

- **Accessibility**: the museum should have a central location with good accessibility in order to ensure the best experience for our visitors.
- **Availability of Labour**: the technical specificities of the museum require qualified human resources that dominate the highly technological equipment necessary for the development of our activity.
- **Flow of Visitors**: the location of the museum should have a considerable flow of visitors to maintain the activity at the box office. Rather, it should be a location where seasonality does not have much impact on visitor flow.

So, through the use of the ELECTRE Method, we can observe that Lisbon is the most interesting city for the opening and development of the sensorial museum, setting the best values according to the established criteria (Annex 27).

12.2. Micro Location

The definition of the location should take into account the needs and preferences of the targeted market segment and therefore the flowing factors should be considered:

- **Means of Transportation**: the abundance and diversity of means of transportation allow the customers to have greater access to the museum. Thus, is essential that the

museum is in the city centre, allowing customers to have access to the entire available infrastructure of public transportation.

- **Cultural Dynamism**: the proximity to points of interest and other commercial establishments, like cafes and restaurants, influences the attractiveness of the museum's location as it has impact on consumer's decision. The cultural dynamism in the selected Lisbon area should encourage people to visit our exhibitions.

- **Building Cost**: the business strategy is aimed at cost containment, in order to enable the practice of more competitive prices. In this sense, it is vital to minimize the initial investment being the building a high factor to be taken into account. At the same time, it is important to consider the characteristics of the building given the technical specificities of the project.

Using the ELECTRE method, we can conclude that the location in the Beato is the best alternative in relation to the others. In addition, it is an area with strong growth of cultural establishments recently which potentiates the success of the projected museum (Annex 28).

The chosen building is located at Beato Creative Hub and has a gross floor approximately of 16,000 square meters. The ceiling height of the entire facilities is about 20 meters, so it is important to make a good organization of the museum area. It has an approved project which will allow the requalification of the museum's facilities.

The museum facilities are a former industrial warehouse with excellent areas for immersive projection activities. For a better optimization of the exhibition area, it was decided to keep the original ceiling height of 20 meters in this room. The exhibition room occupies an area of approximately 10,400 square meters.

The remaining museum's area was split into two floors, namely the ground floor and the first floor. The access to the museum is made through the ground floor, where the customers can buy the entrance tickets and enter the exhibition room.

On this floor, there is also a warehouse for the audio-visual and other technologic equipment. On the first floor are the museum office which are divided into four rooms: the boardroom, the finance department room, the creative department room and the meeting room that can be used for other purposes. On this floor, there is also a platform where our visitors can watch the exhibition from another perspective.

Finally, the layout of the museum can be seen in the Annex 29, where we can observe the outline and description of the different spaces of the sensorial museum.

13. Organization

13.1. Legal Form

The sensorial museum will be a Limited Partnership (in Portuguese: Sociedade por Quotas). It is formed by two partners with limited liability. The share capital of the museum is €800,000.00, divided into two equal stakes of the two partners.

13.2. Organizational Culture

The museum embraces a culture of people, which means that we value the work of our staff and team integration as well as the growth of each of our talents. The worker is placed first, having space to give ideas and points of view that will be consider. In our company, factors such as career planning and talent retention are very well worked out by managers, who seek the formation of leaders who can continue with their legacy, ensuring the growth of people along with the growth of the company.

13.3. Organizational Structure

The museum adopts a functional organizational structure characterized by the horizontal division of departments with specific competences to achieve certain objectives. This structure aims at the decentralization of power, where each department is responsible for its performance, having enough autonomy to plan its actions that must respect the strategic plan defined by the direction.
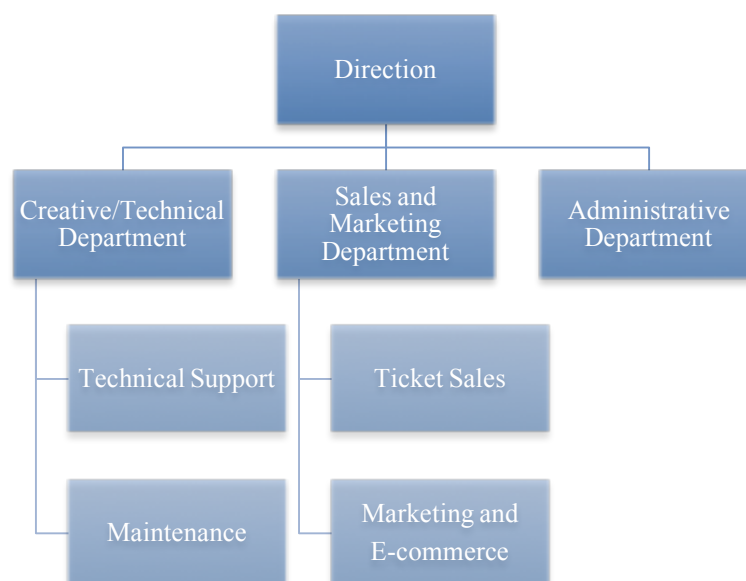
Figure 2 - Organizational Chart of IMMERSIVUS

- **Direction**: the top organ that coordinates the whole activity of the museum. The direction is responsible for defining the strategy and objectives of the company (in direct contact with the other departments). It is responsible for all financial aspects. It is also responsible for all administrative aspects of the company, as well as for all contracts established between the company and external entities. All other departments depend on and report directly to the direction, who is responsible for managing any conflicts that may arise in the company.

- **Creative/Technical Department**: the organ composed of technicians together with the creative team is responsible for the creation and implementation of the exhibitions in the museum. It develops all the creative content of the museum, as well as the most technical features at a creative and technological level.

- **Sales and Marketing Department**: the organ responsible for the communication of the museum, which function as the link between the company and the customers. It is responsible for building a relationship of trust with the client, developing marketing and sales strategies to keep the customers loyalty.

- **Administrative Department**: the body responsible for all the aspects related to the management of the museum. It is responsible for the financial and tax matters of the company, as well as the relations with suppliers.

More information about Organization can be consulted on the Annex 30.

14. Project Planning and Implementation

According to the project planning present in the Gantt Diagram in Figure 3, it is expected the beginning of the activity of the museum to start on May of 2020. For more information about the planning and implementation activities and tasks check the Annex 31.
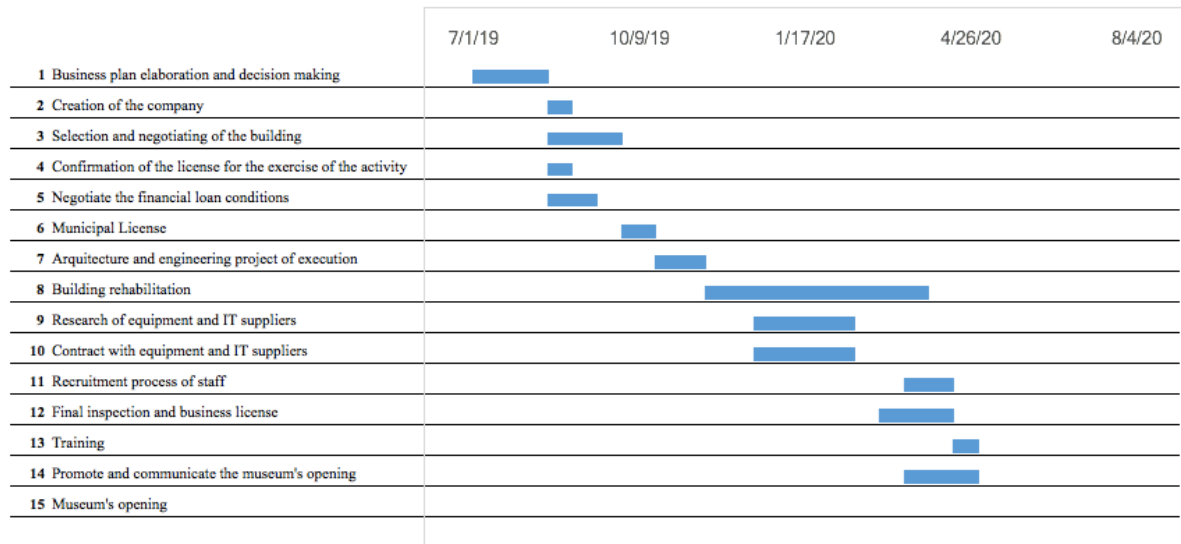
Figure 3 - Project Planning of IMMERSIVUS

15. Economic and Financial Valuation

To analyse the investment project, it is essential to prepare some information about the investment and the museum exploitation, supported by some auxiliary maps. Additionally, we can analyse another maps such as Cash Flow Map, Financial Plan, Income Statement, Balance Sheet, which are crucial to obtain the necessary data to evaluate the project and to make a decision.

15.1. Introduction

15.1.1. Time Horizon of Analysis

The projected investment project of the sensorial museum will be analysed on the time horizon of ten years. According to the Project Planning and Implementation analysis, the proposed museum will start its activity in May 2020 (more information on Chapter 14).

15.1.2. Inflation Rate

For the business plan, it was considered an inflation rate of 1.40%, which is the predicted rate for 2019 by BdP (BdP, 2019).

15.1.3. Corporate Rates – IRC

According to the Portuguese Corporate Tax Code (CIRC), the standard corporate income rate is 21%, to which may be added a municipal tax (*Derrama Municipal*) up to 1.50% levied on taxable profits, as well as a state additional tax (*Derrama Estadual*) of 2.50% on taxable profits, exceeding €1,500,000. Thus, it was defined a corporate tax rate of 22.50% or 25%, related to the taxable profits. The tax losses may be carried forward for a period currently set in 5 years and limited to 70% of the taxable profits.

15.1.4. Legal Reserves

According to the articles 218º and 294º-296º of *Código das Sociedades Comerciais*, a Limited Partnership is required to constitute a minimum legal reserve of € 2,500.00. The museum will set up this reserve when it reaches its first positive net income.

15.1.5. Other Reserves

In 2024, once the Legal Reserve is formed, Other Reserves will be constituted in the annual amount of €12,500.00.

15.1.6. Dividends

The earnings obtained by the museum can be reinvested or distributed for the shareholders as dividends. The museum's dividend policy intends to distribute a significant margin 5% of the museum's earnings.

15.1.7. VAT Rates

There are different VAT rates (6%, 13% and 23%) in Portugal, that are added to the price of a purchase of a product or service (Annex 32).

15.1.8. Depreciations

Regarding the depreciations of the fixed assets, it will be considered the straight line method, by applying the maximum specific rates set out in the *Decreto Regulamentar* N. 25/2009, of 14th of September (actualized by the *Decreto Regulamentar* N. 4/2015, of 22nd of April), and being reinvestments according to the same life cycle. Moreover, and according to the same *Decreto*, the depreciations are only considered after the beginning of the activity of the museum (Annex 33).

When reaching the lifetime of the project, it is assumed the liquidation of the company, being considered the residual value of the assets. However, due to the difficulty in determining the market value of the assets, after this large period of time it will be assumed that the residual value would be equal to the net book value (acquisition cost less accumulated depreciations).

15.1.9. IRS Retention Rate

For the IRS retention of the employee remunerations, including Christmas and holiday subsidies, it was considered the Table 1 of the *Tabelas de Retenção na Fonte para o Continente – 2019*, assuming that all workers are not married and do not have dependents (Annex 34).

15.2. Capital Structure

15.2.1. Capital Structure Policy

According to the Modigliani-Miller theorem, when corporate tax exists, the higher the debt, the greater the value of the company, since it increases the present value of tax benefits of debt interests. Thus, the value of the company increases linearly with the debt, being the optimal capital structure the one that is only financed by debt capital. However, this theorem assumes perfect capital markets and, therefore, it does not take in account the risks and cost

(financial distress and bankruptcy costs) associated to the excessive use of debt. In addition, potential lenders will avoid a project presenting a high leverage.

Considering the necessary capital for the investment of the project, it will be distributed according to the following table (Table 5):

Capital Structure	Total Amount	% of Total
Share Capital	€800,000	40%
Financing	€1,200,000	60%
Necessary Capital for the Investment	€2,000,000	100%

Table 5 – Capital Structure

Regarding the capital, it will be delivered in a single instalment of €800,000 during 2019, in order to finance the fixed assets.

Although the museum's activity represents a large investment, it shows the ability to generate cash flows and, therefore, can take advantage of financing. Thus, the medium and long term solution used by the museum to fund its activity is bank credit. The bank credit, like capital, will be mainly used to finance the fixed assets.

15.3. Investment

15.3.1. Real Estate Investment

15.3.1.1. *Land and Building*

The museum will establish a partnership with the Creative Hub of Beato to "rent" the facilities for this project. This partnership will be based on the attribution of Sales a part of the billing to the Creative Hub.

By contractual link, the Beato Creative Hub, legitimate owner of the Beato building, located at Avenida Infante Dom Henrique, gives the museum the use of its facilities. In return for this transfer, the museum will pay a fixed amount for each ticket sold monthly to the Beato Creative Hub in the following terms:

- €1.25 for each "Bilhete Inteiro", in the amount of €15.00;
- €1.00 for each "Bilhete Reduzido", in the amount of €12.00;
- €0.75 for each "Bilhete Promo", in the amount of €10.00;
- €0.50 for each "Bilhete Escola", in the amount of €7.00.
- For commercial reasons and in order to improve the commercial success of the initiative, the museum will be able to change the price of tickets at any time, after re-examination and agreement of the Beato Creative Hub accordingly.

Regardless of the number of tickets sold, and only from May 2020 inclusive, the museum will always pay a minimum monthly fee of € 5,000.00 plus VAT at the legal rate in force. The Annex 35 presents detailed information on the annual fees paid to the Beato Creative Hub.

For control of the number of tickets sold and calculation of the variable price component, if and when due, the museum must provide, at the first monthly, the ticket management software reports (duly certified and accredited) per se used for this purpose.

The payments from the museum to the Beato Creative Hub, due only from May 2020 until the date of closure to the public in 2029, must be made on a monthly basis until the 10th of each month (if this coincides with a weekend or holiday, on the next working day) against invoicing by the latter.

Any amendment by the museum, whether in relation to the assigned premises or the value of the transfer, shall only be possible if it has been previously agreed writing by the first contractor.

15.3.1.2.   *Requalification Costs*

Given that the space provided to implement the museum requires works of requalification and renovation, it was contracted with Beato Creative Hub that these charges would be the responsibility of the museum and that they would be taken into account when defining the museum's rent. To calculate the requalification costs, it was considered the museum's dimension (16,000 square meters) and an average cost of construction per square meter (€ 10.00). So, the estimated total amount of requalification works is € 160,000.00.

15.3.1.3.   *License, Charter and Writing*

As this is a real estate rental agreement, no IMT or IMI charges are incurred. However, it was considered a value of 1% of the rent paid for other expenses of the Land and Building Investment.

15.3.2. Equipment and Other Investments

The projected investment in equipment can be found in the Annex 37.

15.3.3. Investment Summary Table

Investment Summary Table	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Tangible Fixed Assets										
Real Estate Investment										
Land and Building	20,808	28,652	36,532	44,715	54,731	61,408	68,900	77,306	82,794	88,673
Requalification Costs	160,000	-	-	-	-	-	-	-	-	-
Interior Design	14,000	-	-	-	-	-	-	-	-	-
License, Charter and Writing	208	287	365	447	547	614	689	773	828	887
Equipments										
Furniture	10,250	-	-	-	-	-	-	-	-	-
Machinery and Appliances	787	-	-	-	-	844	-	-	-	-
Computers	20,341	-	-	21,207	-	-	22,110	-	-	23,052
Projectors	379,342	-	-	-	-	406,650	-	-	-	-
Servers	20,000	-	-	-	-	20,000	-	-	-	-
Audio Systems	10,160	-	-	-	-	10,891	-	-	-	-
Extras (Cables and Other Equipment)	28,052	-	-	29,247	-	-	30,493	-	-	31,792
Total Tangible Asset Investment	**663,947**	**28,939**	**36,897**	**95,616**	**55,278**	**500,406**	**122,192**	**78,079**	**83,622**	**144,403**
Intangible Fixed Assets										
Computer Software										
MadMapper – Annual License	2,075	2,104	2,134	2,163	2,194	2,224	2,256	2,287	2,319	2,352
Industrial Property										
Institutional Website	16,386	-	-	17,084	-	-	17,812	-	-	18,557
Financial Charges										
ATP Commissions	1,409	1,941	2,474	3,029	3,707	4,159	4,667	5,236	5,608	6,006
Total Intangible Asset Investment	**19,871**	**4,045**	**4,608**	**22,276**	**5,901**	**6,384**	**24,734**	**7,523**	**7,927**	**26,914**

Table 6 – Investment Summary Table (values in €)

15.3.4. Investment in WC

Investment in WC	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Exploitation Needs	**131,617**	**6,251**	**2,934**	**12,109**	**-**	**74,433**	**2,493**	**-**	**-**	**-**
State										
VAT	131,617	6,251	2,934	12,109	-	74,433	2,493	-	-	-
Exploitation Resources	**20,473**	**21,983**	**22,358**	**22,738**	**93,947**	**82,160**	**101,563**	**137,779**	**154,454**	**157,933**
Facilities										
- Electricity	941	1,412	1,432	1,452	1,472	1,493	1,514	1,535	1,556	1,578
- Water	147	220	223	226	229	233	236	239	242	246
Outsourcing Services										
- Accounting	1,231	1,846	1,872	1,898	1,925	1,952	1,979	2,007	2,035	2,063
- Cleaning	1,210	1,227	1,244	1,262	1,279	1,297	1,315	1,334	1,352	1,371
- Communication	73	74	75	76	78	79	80	81	82	83
- Information Technology	167	169	171	174	176	179	181	184	186	189
- Insurance	1,990	2,018	2,046	2,075	2,104	2,133	2,163	2,193	2,224	2,255
- Litigation and Notary	150	-	-	-	-	-	-	-	-	-
- Maintenance	42	58	73	90	110	123	138	155	166	178
- Marketing Promotion	3,333	3,380	3,427	3,475	3,524	3,573	3,623	3,674	3,725	3,778
- Office Material	167	169	171	174	176	179	181	184	186	189
- Representation Expenses	656	665	674	684	694	703	713	723	733	743
- Safety	5,333	5,408	5,484	5,560	5,638	5,717	5,797	5,878	5,961	6,044
- Other Expenses	-	209	288	367	449	549	616	691	776	831
State										
- VAT	-	-	-	-	4,822	-	-	14,221	16,392	5,048
- IRC	-	-	-	-	65,997	58,625	77,649	99,251	113,354	127,800
- Social Security (Employer)	2,304	2,369	2,402	2,435	2,470	2,504	2,539	2,575	2,611	2,647
- Social Security (Personnel)	1,067	1,097	1,112	1,128	1,144	1,160	1,176	1,193	1,209	1,226
- IRS	1,662	1,662	1,662	1,662	1,662	1,662	1,662	1,662	1,662	1,662
WC	**111,144**	**(15,732)**	**(19,424)**	**(10,629)**	**(93,947)**	**(7,727)**	**(99,071)**	**(137,779)**	**(154,454)**	**(157,933)**
Investment in WC	**111,144**	**(126,876)**	**(3,692)**	**8,795**	**(83,319)**	**86,220**	**(91,344)**	**(38,709)**	**(16,675)**	**(3,478)**

Table 7 – Investment in WC (values in €)

15.4. Sensorial Museum Exploitation

15.4.1. Sales Forecast

Sales by Type of Entrance Ticket					
Year	"Bilhete Inteiro"	"Bilhete Reduzido"	"Bilhete Promo"	"Bilhete Escola"	**Total**
2020	169,992	72,530	6,714	1,316	**250,553**
2021	234,080	99,874	9,246	1,812	**345,011**
2022	298,452	127,339	11,788	2,310	**439,890**
2023	365,305	155,863	14,429	2,828	**538,425**
2024	447,133	190,777	17,661	3,462	**659,032**
2025	501,683	214,051	19,815	3,884	**739,434**
2026	562,888	240,166	22,233	4,358	**829,645**
2027	631,561	269,466	24,945	4,889	**930,862**
2028	676,402	288,598	26,716	5,236	**996,953**
2029	724,426	309,089	28,613	5,608	**1,067,736**

Table 8 – Sales Forecast (values in €)

15.4.2. Operational Costs

The analysis of the operating costs was made into three levels, namely the cost of facilities and outsourcing services, payroll and other operational expenses.

More details about operational costs are presented in the Annexes 37, 38 and 39.

15.5. Cash Flow Table

Cash Flow Table	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Financial Resources										
Operational Cash Flow	(14,663)	62,426	132,843	206,265	296,651	356,740	423,591	498,737	546,384	597,994
Divesture in WC	-	126,876	3,692	-	83,319	-	91,344	38,709	16,675	3,478
Residual Value WC	-	-	-	-	-	-	-	-	-	(157,933)
CAPEX Residual Value	-	-	-	-	-	-	-	-	-	48,933
Financial Needs										
Investment in CAPEX	683,817	32,984	41,505	117,892	61,179	506,790	146,926	85,602	91,549	171,317
Investment in WC	111,144	-	-	8,795	-	86,220	-	-	-	-
Cash Flow	(809,625)	156,319	95,030	79,578	318,791	(236,271)	368,009	451,844	471,509	321,156
Accumulated Cash Flow	(809,625)	(653,306)	(558,276)	(478,698)	(159,908)	(396,179)	(28,170)	423,674	895,183	1,216,339
Cash Flow Discounted	**(751,425)**	**136,690**	**77,621**	**60,655**	**226,442**	**(156,120)**	**225,634**	**256,110**	**245,655**	**152,327**
Accumulated Cash Flow	**(751,425)**	**(614,735)**	**(537,114)**	**(476,459)**	**(250,017)**	**(406,137)**	**(180,503)**	**75,607**	**321,261**	**473,588**

Table 9 – Cash Flow Table (values in €)

59

15.6. Financial Plan

Financial Plan	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Origin Funds	800,000	1,147,701	172,888	139,396	228,967	427,412	419,111	595,309	638,420	677,110	729,417
EBITDA	-	(52,299)	45,896	135,592	228,862	343,995	418,994	503,884	599,603	660,290	725,754
Share Capital	800,000	-	-	-	-	-	-	-	-	-	-
Financing		1,200,000									
Divesture in WC	-	-	126,876	3,692	-	83,319	-	91,344	38,709	16,675	3,478
Financial Incomes	-	-	115	112	105	98	117	82	109	145	185
Application Funds	-	794,962	201,298	210,411	299,562	236,726	772,619	330,007	272,627	281,149	352,581
Investment in WC	-	111,144	-	-	8,795	-	86,220	-	-	-	157,933
Investment in CAPEX	-	683,817	32,984	41,505	117,892	61,179	506,790	146,926	85,602	91,549	171,317
Payment of Dividends	-	-	-	-	3,969	6,641	10,702	14,175	18,118	20,693	23,329
Reimbursement of Loans	-	-	134,157	138,847	143,070	147,422	151,906	156,526	161,287	166,193	-
Financial Expenses	-	-	34,157	30,059	25,836	21,484	17,000	12,380	7,619	2,713	-
Treasury Balance	800,000	352,740	(28,410)	(71,015)	(70,594)	190,686	(353,507)	265,302	365,793	395,961	376,837
Accumulated Treasury Balance	800,000	1,152,740	1,124,329	1,053,314	982,720	1,173,406	819,899	1,085,201	1,450,994	1,846,955	2,223,792
Applications	800,000	1,152,624	1,124,217	1,053,209	982,622	1,173,289	819,817	1,085,092	1,450,849	1,846,771	2,223,570

Table 10 – Financial Plan (values in €)

15.7. Income Statement

Income Statement	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenues	250,553	345,011	439,890	538,425	659,032	739,434	829,645	930,862	996,953	1,067,736
Operational Costs										
Cost of Facilities	(92,638)	(101,128)	(103,088)	(105,074)	(107,120)	(109,256)	(111,222)	(113,268)	(115,355)	(117,292)
Cost of Outsourcing Services	(206,961)	(194,235)	(196,954)	(199,711)	(202,507)	(205,342)	(208,217)	(211,132)	(214,088)	(217,085)
Other Operational Expenses	(3,253)	(3,753)	(4,256)	(4,777)	(5,410)	(5,841)	(6,322)	(6,859)	(7,220)	(7,605)
EBITDA	**(52,299)**	**45,896**	**135,592**	**228,862**	**343,995**	**418,994**	**503,884**	**599,603**	**660,290**	**725,754**
Depreciations	(122,751)	(122,780)	(122,809)	(123,759)	(123,789)	(129,439)	(130,429)	(130,460)	(130,492)	(131,520)
EBIT	**(175,049)**	**(76,884)**	**12,783**	**105,104**	**220,206**	**289,555**	**373,455**	**469,143**	**529,798**	**594,234**
Interest Income	-	115	112	105	98	117	82	109	145	185
Interest Expenses	-	(34,157)	(30,059)	(25,836)	(21,484)	(17,000)	(12,380)	(7,619)	(2,713)	-
Earnings Before Taxes	**(175,049)**	**(110,925)**	**(17,164)**	**79,373**	**198,821**	**272,673**	**361,158**	**461,632**	**527,230**	**594,419**
Income Tax	-	-	-	-	(65,997)	(58,625)	(77,649)	(99,251)	(113,354)	(127,800)
Net Earnings	**(175,049)**	**(110,925)**	**(17,164)**	**79,373**	**132,824**	**214,048**	**283,509**	**362,381**	**413,875**	**466,619**
Tax Losses										
Auxiliary Calculations										
Initial Income Taxable	(175,049)	(110,925)	(17,164)	-	-	-	-	-	-	-
Accumulated Deductible Tax Losses (70%)	(175,049)	(285,975)	(303,139)	-	-	-	-	-	-	-
Deductible Tax Losses	(122,535)	(77,648)	(12,015)	-	-	-	-	-	-	-
Used Tax Losses	-	-	-	79,373	132,824	-	-	-	-	-
Final Income Taxable	-	-	-	-	65,997	58,625	77,649	99,251	113,354	127,800

Table 11 – Income Statement (values in €)

15.8. Balance Sheet

Balance Sheet	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Assets	**800,000**	**1,845,423**	**1,601,851**	**1,446,215**	**1,385,398**	**1,445,368**	**1,497,521**	**1,642,231**	**1,873,922**	**2,129,495**	**2,430,828**
Non-Current Assets											
Tangible Assets	-	548,733	462,459	384,142	363,858	303,236	682,122	682,078	637,921	599,308	620,728
Intangible Assets	-	12,334	8,812	5,824	20,243	18,255	16,719	33,261	32,560	32,230	50,607
Current Assets											
Income Taxes	-	131,617	6,251	2,934	12,109	-	74,433	2,493	-	-	-
Cash	800,000	1,152,740	1,124,329	1,053,314	989,188	1,123,878	724,246	924,399	1,203,441	1,497,957	1,759,494
Assets	**800,000**	**1,845,423**	**1,601,851**	**1,446,215**	**1,385,398**	**1,445,368**	**1,497,521**	**1,642,231**	**1,873,922**	**2,129,495**	**2430,828**
Equity	**800,000**	**624,951**	**514,025**	**496,861**	**578,735**	**714,917**	**930,763**	**1,212,596**	**1,569,359**	**1,975,040**	**2,430,828**
Share Capital	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
Legal Reserves	-	-	-	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Other Reserves	-	-	-	-	-	12,500	25,000	37,500	50,000	62,500	75,000
Retained Earnings	-	-	(175,049)	(285,975)	(303,139)	(232,907)	(110,785)	89,087	354,477	696,165	1,086,709
Net Earnings	-	(175,049)	(110,925)	(17,164)	79,373	132,824	214,048	283,509	362,381	413,875	466,619
Liabilities	**-**	**1,220,473**	**1,087,825**	**949,354**	**806,663**	**730,451**	**566,758**	**429,635**	**304,563**	**154,454**	**-**
Non-Current Liabilities											
Loans	-	1,200,000	1,065,843	926,996	783,925	636,503	484,598	328,071	166,784	-	-
Current Liabilities											
Suppliers	-	15,440	16,855	17,181	17,512	17,853	18,209	18,537	18,878	19,226	-
Income Taxes	-	5,033	5,128	5,177	5,226	76,094	63,951	83,026	118,901	135,229	-
Equity and Liabilities	**800,000**	**1,845,423**	**1,601,851**	**1,446,215**	**1,385,398**	**1,445,368**	**1,497,521**	**1,642,231**	**1,873,922**	**2,129,495**	**2,430,828**

Table 12 – Balance Sheet (values in €)

15.9. Evaluation of the Project

15.9.1. Discount Rate

In order to analyse the economic viability of the investment project is necessary to discount all the cash flows to the same moment, applying a constant discount rate in all years. The discount rate applied in the evaluation of the project was obtained through the CAPM, which aggregates the time of money and the risk for the investors. The risk premium of the project in terms of its economic risk is given by its unlevered beta, since it is considered that the investment in entirely financed by equity.

The unlevered beta considered for the project was the beta of the average equity of the Entertainment industry, since it is a new project, being considered a beta of 0.96 (Damodaran; www.damodaran.com).

For the risk-free rate it was assumed the coupon of the Portuguese Government Bond with a maturity of 30 years and emitted on March 2019, which corresponds to 2.59%. On the other hand, it was considered the total equity risk premium of Portugal in January of 2019 which is 7.96%.

To conclude, the discount rate for the project is 7.75%:

CAPM	Symbol	$Ru=\beta_U[E(Rm)-Rf]$ (1)
Unlevered Beta	β_U	0.96
Risk-Free Rate	Rf	2.59%
Market Equity Risk Premium	[E(Rm)]	7.96%
Market Risk Premium	[E(Rm)-Rf]	5.37%
Discount Rate	**Ru**	**7.75%**

Table 13 - CAPM

15.9.2. Evaluation Indicators (Equity Return Rate)

The business project was evaluated for a period of 10 years, according to the following criteria:

Indicators (Ru=7.75%)	Value
NPV @ Ru=7.75%	€447,110.47
IRR	8.90%
PP	8 Years

Table 14 – Evaluation Indicators for the Investment Project (Equity Return Rate)

This investment project presents a positive NPV, showing that it allows the recovery of the investment. Thus, based on this indicator the decision is to accept the project.

The IRR of the project is higher than the considered discount rate (8.90% versus 7.75%), being the project economically viable. The payback period of the project is 8 years.

Despite that, it is important that the NPV was calculated assuming that the project is completely financed by equity (Ru=7.75%), being relevant to analyse the effects of debt on the value of the investment project, since the project will be financed in 40% by equity and 60% through debt. To do this, it will be used the WACC, that consists on incorporating the effects of the financing decision by adjusting the discount rate.

15.9.3. Weighted Average Cost of Capital – WACC

In order to compute the WACC, firstly, it is necessary to find the return on equity rate, taking into account the leverage risk of the project. The rate was obtained through the CAPM, aggregating the time value of money and the risk for the investors. The risk premium of the project in terms of its economic risk is given by its levered beta, since the investment is not entirely financed by equity. Thus, in order to calculate the levered beta was used the following expression, assuming there is no risk associated to the debt:

$$\beta_l = \beta_u \left[1 + (1 - t) \frac{D}{E} \right] (2)$$

Regarding to the Return on Debt (Rd) of the financing it was estimate an interest rate of 3% for the bank financing.

WACC	Symbol	$WACC = Re * \frac{E}{E+D} + Rd * (1 - t) * \frac{E}{E+D}$ (3)
Debt	D	€2,000,000.00
Equity	E	€800,00.00
Debt + Equity	D+E	€2,000,00.00
Corporate Tax	T	21.50%
Unlevered Beta	β_U	0.96
Levered Beta	β_L	2.01
Risk-Free Rate	Rf	2.59%
Market Equity Risk Premium	[E(Rm)]	7.96%
Market Risk Premium	[E(Rm)-Rf]	5.37%
Return on Equity	**Re**	**13.82%**
Return on Debt	**Rd**	**3.00%**
WACC		**6.94%**

Table 15 - WACC

To conclude, the WACC is 6.94%, being lower than the return on equity when the project is entirely financed by equity (Ru=7.75%).

15.9.4. Evaluation Indicators (WACC)

Analysing the business using the WACC, it will be achieved a NPV of €473,588.18, which is higher than the achieved before, i.e. taking into account the entirely financing through equity (the discount rate is the return on equity (Ru)). This way, it can be conclude that the investment project is viable, being positive the impact of financing through debt.

15.10. Key Performance Indicators

The museum's performance indicators are important to evaluate the success of the company during a period of time. These indicators are divided according to the following categories: economic, financial and liquidity indicators (Annex 40).

15.10.1. Economic Indicators

The Profit Margin is negative in the first three years of exploitation, because the sales are not enough to meet all the expenses of the museum. However, it can be observed that the Profit Museum is increasing over time, as the sales revenue are positively impacting the profit.

15.10.2. Economic-Financial Indicators

The ROI is negative in the first three years of exploitation, increasing over the years to reach the 23.33% in the last year of evaluation. The ROA and the ROE also present negative values in the first years of museum's exploitation, increasing over the years, presenting 69.51% e 58.33% in the last year of the analysis.

15.10.3. Financial Indicators

The Equity Ratio shows the proportion of the company's assets that are funded by equity stakes. Thus, the greater its value, greater is the financial strength of the museum. This ratio increases until 2024, showing the financial robustness of the project during that period. Until then, this ratio decreases until the end of the period analysis.

The Debt-to-Equity Ratio is used to evaluate a company's financial leverage. Regarding this ratio, we can note that it decreases over the analysis period due to the reductions of the museum's financial obligations.

15.10.4. Liquidity Indicators

The Current Ratio measures the company's ability to pay short-term obligations or those due within one year. The ratio is higher than 100% in all the years of the analysis period,

which proves that the museum has the capacity to pay its current liabilities with its current assets.

15.11. Sensitivity Analysis

To assess the economic and financial viability of the project it is important to analyse the sensitivity of the project to changes in the most relevant variables. The chosen variables were the museum entrance price and the number of museum's visitors, since both indicators have a considerable impact on the results of any museum and are variables highly influenced by the external environment.

Regarding the entrance price of the museum the table below presents the associated sensitivity analysis from changes in the prices:

Price Growth	NPV @ WACC=6.94%	IRR	PP
-5.00%	€(293,895.99	-	-
-3.00%	€(11,967.64)	-	-
-2.00%	€141,079.29	3.14%	10 Years
-1.50%	€220,816.66	4.77%	9 Years
-	€473,588.18	9.37%	8 Years
+1.50%	€747,999.51	13.64%	6 Years

Table 16 – Price Growth Sensitivity Analysis

The table below present the NPV, IRR and PP, using WACC as discount rate, for reduced number of museum's visitors:

Visitors Number Growth	NPV @ WACC=6.94%	IRR	PP
-20.00%	€(115,062.11)	-	-
-17.50%	€(41,480.82)	-	-
-15.00%	€32,100.47	0.66%	10 Years
-10.00%	€179,263.04	3.65%	9 Years
-	€473,588.18	9.37%	8 Years
+10.00%	€766,997.89	14.77%	6 Years

Table 17- Visitors Number Growth Sensitivity Analysis

Finally, the next table presents a combination of both variables:

NPV @ WACC=6.94%		Visitors Number Growth					
		-20.00%	-16.00%	-15.00%	-10.00%	-	+10.00%
Price Growth	-4.50%	(674,973)	(585,240)	(562,805)	(450,638)	(293,896)	(1,965)
	-3.00%	(503,507)	(405,199)	(380,622)	(257,737)	(11,968)	233,802
	-2.00%	(381,069)	(276,640)	(250,532)	(119,995)	141,079	401,897
	-1.50%	(317,279)	(209,660)	(182,755)	(48,231)	220,816	489,445
	-	(115,062)	(41,481)	32,100	179,263	473,588	766,997

	+1.50%	104,467	233,173	265,350	426,233	747,999	1,068,347

Table 18 – Sensitivity Analysis (values in €)

The most optimistic scenario has an increase of 1.50% on entrance prices and an increase of 10.00% of the annual number of museum's visitors, presenting a NPV of € 1,068,347. By the contrary, the worst scenario has a negative NPV of € 674,973, in which there are a decrease of 4.50% in the entrance price and a decrease of 20.00% in the number of museum's visitors.

16. Conclusion and Critical Analysis

The tourism industry has a great importance for the Portuguese economy because of its capacity for wealth-generation as well as for job creation. The most dynamic sectors were those linked to travel agencies, tour operators, guides, hotels and similar accommodation establishments. Increasingly stimulated by consumers' habits and lifestyles, tourism has presented different modalities as well as new tourist products have become increasingly recognized.

The presented investment project consists in the creation of a centrally located sensorial museum in the city of Lisbon, at Beato Creative Hub, that offers a unique video-mapping immersive experience, aiming to present the history and culture of the city of Lisbon.

The project competitive edge and core competencies are based on its strategic location, remarkable video-mapping immersive exhibitions, superior customer service and environmental responsibility.

The museum focus on a differentiation strategy that aims to highlight the innovative qualities of the video-mapping exhibitions. The investment in high technology to create a 360º immersive experience to the museum's visitors is the strong point of the museum.

Regarding the target client group, the museum focus on educational group and on individual customers, which encompasses the local audience and the recreational tourists. The reason is that they are open minded towards such a project and are more aware of the experiences they would like to do.

To ensure the success of the presented business, it is important to be a pioneer and to start it as soon as possible and to promote the creation of business relationships with potential customers and suppliers.

Several components were used to understand if the sensorial museum is feasible or not. First, the competition analysis is essential to perceive if there is audience for this concept. Through this analysis, the main player in the market were identified and it can be concluded that Lisbon Story Centre is the one that can be compared to the sensorial museum. However, these unit cannot be put on the same level as IMMERSIVUS since the concepts differ from each other.

Secondly, a SWOT analysis helped to understand the feasibility. This tool assisted to understand that the sensorial museum can be implemented since the strengths and opportunities outweigh the weaknesses and threats. It is crucial to understand the company's weaknesses as well as the threats, of which the latter ones cannot be influenced by the company in order to

understand the associated risks of the implementation. However, the lookout can be seen rather positive, therefore the concept of the sensorial museum should be taken into action.

Through the financial and economic analysis, it can be concluded that the project is economically viable, presenting a positive NPV, which means that all the investment is recovered, the shareholders are remunerated at a rate of 13.82% and it generates a surplus of €473,588.18. Furthermore, the project presents a IRR of 9.37%, being the investment recovered in 8 years.

The analysis of the performance indicators is also favourable, ensuring the success of the museum and supporting the decision of investing in the project.

It should be noted that during the investment project several assumptions were made in order to proceed with its realization. The one that will have most influence is the number of visitors of the museum. Thus, to bring reality as close as possible, the number of visitors of video-mapping events occurred in Portugal were taken into account.

Besides that, the motivations and behaviours of the tourists are constantly changing, influencing positively or negatively the tourism demand and the competitor decision. Thus, it has a huge impact on the future profitability and viability of the project. Through the sensitivity analysis, it could be observed that some changes in the most relevant variables (price and number of visitors) impact on the economic and financial viability of the present investment project. Therefore, it is crucial to analyse the surrounding environment and understand how this business plan can be adjusted if any relevant change happens, in order to continue its sustainability.

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18. Annexes

Annex 1 - Tourism Industries

Tourism includes many services with the objective to improve a travel experience: transportation, accommodations, eating and drinking establishments, shops, entertainment, activity facilities and other hospitality services available for individuals or groups that are travelling away from home. This industry is dynamic and competitive which requires the ability to adapt constantly to customers' changing needs and desires, as the customer's satisfaction, safety and enjoyment are particularly the focus of tourism businesses. The tourism and hospitality industry can be classified in diverse sectors such as:

- **Transportation**

This sector covers air, land and water travel, which includes cruises, trains, taxis, motor coach and airplanes. It is important to make the journey pleasurable and efficient, with good service and comfortable surroundings.

- **Travel Services**

The travel trade includes retail travel agencies, business travel departments and travel clubs. This sector improves the customer service and satisfaction.

- **Recreation and Entertainment**

Attractions, adventure and recreation tourism offer a variety of experiences to tourists. A key component of the tourism industry is attractions, that offers visitors a change to explore the sights, facilities and wonders of their destination. Attractions generally include historic sites, heritage homes, museums, art galleries, ski hills, aquariums, zoos, water parks, amusement parks, casinos and cultural attractions.

- **Accommodation**

Accommodation is one of the largest sectors in the tourism industry. This sector is very important to the tourism because it gives the tourist a place to live and stay for a temporally amount of time. Accommodations are used for tourist to spend the night, which include hotels, hostels and resorts.

- **Food and Beverage Services**

This sector encompasses all types of establishments that supply food and beverages for consumption, from restaurants and bars to nightclubs and posh dining rooms. Kitchen staff, room service staff, food and beverage servers and bartenders are just some of the positions that are available in this area.

Annex 2 -   International Tourism Arrivals and Tourism Receipts

Map of International Tourism Arrivals and Tourism Receipts (values in USD)

Americas		Europe		Asia and the Pacific	
216 million	+2%	710 million	+5%	348 million	+7%
USD 334 billion	+0%	USD 570 billion	+5%	USD 435 billion	+7%

Africa		Middle East	
67 million	+7%	60 million	+5%
USD 38 billion	+2%	USD 73 billion	+4%
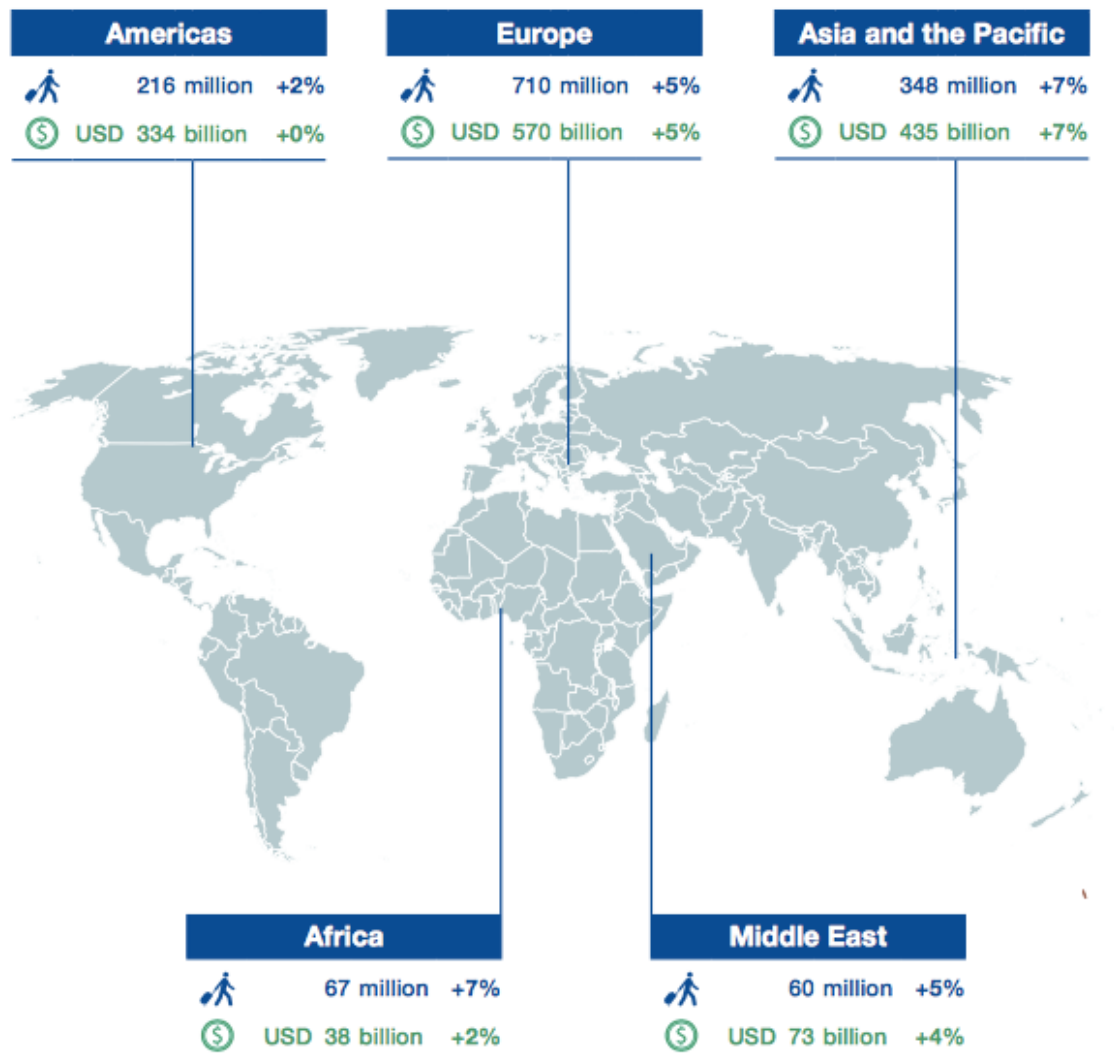
Source: UNWTO

Annex 3 -   Tourism Classification

As per UNWTO definition, tourism can be classified into the following groups:

- **International Tourism**: activities of resident visitors outside the country of residence, either as part of domestic or outbound tourism trips and the activities of non-resident visitors within the country of reference on inbound tourism trips.
  - o Inbound Tourism: activities of non-residents visitors, travelling to a given country outside their usual environment.

    ○ <u>Outbound Tourism</u>: activities of resident visitors outside their country of residence and their usual environment, either as a part of an outbound tourism trip or as a part of a domestic tourism trip.

- **Internal Tourism**: activities of resident and non-resident visitors travelling to a given country as part of domestic or inbound tourism trips.

- **Domestic Tourism**: activities of national tourists of a given country, travelling and staying in places within the country of residence.

- **National Tourism**: activities of resident visitors inside and outside the country of residence, either as part of domestic or outbound tourism trips.

Annex 4 -   Tourism Growth Perspectives 1950-2030

Tourism Growth Perspectives 1950-2030
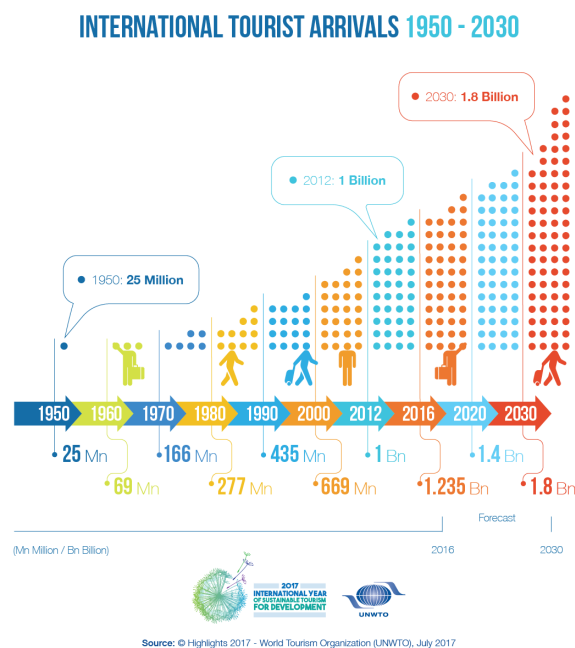
Source: UNWTO

Annex 5 -   The History of Projection Mapping

Although the history of projection mapping dates to the middle of the last century, the video mapping has gained popularity among artists and advertisers in recent years. In the following graph, we can see the growth rates of projection mapping since 2004.

Evolution of Projection Mapping
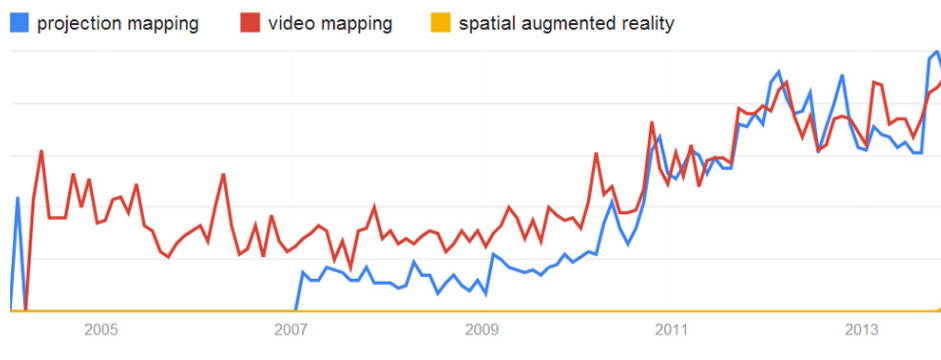
The first known instance of projection onto a non-flat surface dates to the 1969 opening of the Haunted Mansion ride in Disneyland. The dark ride featured several interesting optical illusions, including a disembodied head, Madame Leota, and five singing busts, the "Grim Grinning Ghosts", singing the theme song of the ride. These were accomplished by filming head-shots of the singers and then projecting this film onto busts of their faces.

The next projection mapping instance comes in 1980, with the immersive film installation a living room with two performers were filmed with a rotating camera, then the camera was replaced with a projector. The result is rotating projection mapping.

Disney is not only pioneered the technology of projection mapping, they also have the earliest patent in the space in 1991. Entitled "Apparatus and method for projection upon a three-dimensional object". It is essentially describes a system for digitally painting an image onto a three dimensional object.

Projection mapping really started to get traction when it was pursued in academia during 1998. "Spatially Augmented Reality" was created of the work UNC Chapel Hill by Ramesh Raskar, Greg Welch, Henry Fuchs and Deepak Bandyopadhyay et al. It all got started with a paper "The Office of the Future" that envisioned a world where projectors could cover any surface. Instead of starting at all small computer monitor, we would be able to experience augmented reality right from our desk. This way we could Skype with life size versions of our office mates, view life-size virtual 3D models.

John Underkoffler is know as the designer who invented the Minority Report interface and the Chief Scientist of Oblong Industries, Inc. But before that, he pioneered some of the early work in interactive projection mapping. He introduced in 1999 the concept of the Input/Output Bulb, namely a projector coupled with a camera that could one be as ubiquitous as a traditional light blue.

From there Raskar et al. went on to explore moveable projectors. These hand-held smart-projectors are aware of their position and orientation through a variety of sensors. They demonstrated using smart projectors to aid in warehouse inventory and maintenance.

On 2004, Oliver Bimber explored projecting onto paintings and converting drapes into projection screens.

The 3D projections as we experience them today, only began to be possible near 2005, when high power projectors became more financially accessible.

Nowadays, Video Mapping has several uses. Entertainment is the most common, with outdoor spectacles, using screen-like monuments know or large buildings. Being a relatively recent technology, the public's receptivity is quite remarkable. On the other hand, it is also used in a mixture of entertainment and information. For instance, in the American Basketball League (NBA) the use of Video Mapping presentations is frequent for the presentation of the players of the teams. This alternative becomes much more appealing to the viewer than a simple list displayed on the giant screen.

The advertising is another of the uses of Video Mapping. Companies such as Coca-Cola, Samsung, Heineken, among others, have already used the projection video on 3D objects to advertise their products. Although Video Mapping is not the most consensual form of advertising, it is undoubtedly one of the most spectacular in the way it catches the attention of the consumers.

Annex 6 -   The History of *Les Carrières de Lumières*

In 19th century, the neighboring villages of *Les Baux* and *Fontvieille* rivalled the stone market, defendind the quality of its white stones. The number of quarries operating in *Les Baux* at that time testifies to the increase production of the city. One of these quarries was Les Grands Fonds, known today as *Les Carrières de Lumières*.

Following the First World War, the demand for stone for construction purposes declined. New building materials such as steel emerged. More economical than stone, these new materials threatened the future of stone quarries. In 1935, the quarry was eventually forced to close.

In the 1960s, the quarry found a new function thanks to the visionary genius of Jean Cocteau. Entranced by the beauty of the place and the surrounding environment, he decided to film The Testament of Orpheus on the site.

The site was further transformed through the creation of a new project inspired by the ideas of Joseph Svoboda, scenographers of the of the second half of the 20th century. This project was designed to enhance the space: it was decided that the huge rock walls of the quarry would form the backdrop for a sound and light show.

The town of *Baux-de-Provence* entrusted Culturespace with the management of the quarry in 2012, as part of public service concession agreement. Named *Les Carrières des Lumières*, Culturespaces have developed a unique and innovative concept for the site: AMIEX® (Art & Music Immersive Experience). *Les Carrières des Lumières* opened in March with the exhibition "Guauguin, Van Gogh: Painters in Colour", a musical journey into the colourful worlf of these two artists, produced by Culturespaces and directed by Gianfranco Ianuzzi, Renato Gatto and Massimi.

In 2013, *Les Carrières des Lumières* presented a new exhibition of immersive art "Monet, Renoir, Chagall…Journeys around the Mediterranean". Produced by Culturespace and realised by Gianfranco Ianuzzi, Renato Gatto and Massimiliano Sicciardi, this show invited spectators to explore the quarry at their own pace and to enjoy different works by 16 major artists around the theme of the Mediterranean.

Next year, the exhibition of immersive art "Klimt and Vienna", produced by Culturespace and realised by Gianfranco Ianuzzi, Renato Gatto and Massimiliano Siccardi presented an overview of 100 years of Viennese painting with a special focus on the brightly coloured works of Gustav Klimt, his contemporaries and all those he inspired.

After this, *Les Carrières des Lumières* pursued their innovative and ambitious artistic project with the exhibition of immersive art "Michelangelo, Leonard da Vinci, Raphael: The Giants of the Reinassance" during 2015. Produced by Culturespaces, realised by Gianfranco Ianuzzi, Renato Gatto and Massimiliano Siccardi, this exhibition provided audiences with a unique opportunity to enjoy some of the greatest masterpieces of the Italian Renaissance from a new perspective.

Another exhibition of immerse art produced by Culturespace and created by Gianfranco Iannuzzi, Renato Gatto and Massimiliano Siccardi, with the musical collaboration of Luca Longobardi were apresented in 2017. This new creation invites to explore the unbridled imagination of the animated paintings of Bosch, Brueghel and Arcimboldo.

Last year digitised masterpieces by Picasso, Goya and Sorolla created a dialogue to the sound of music on the immense limestone surfaces of the Carrières. A veritable invitation to go on a journey of discovery, this original multimedia exhibithion, produced by Culturespaces

and created by Gianfranco Ianuzzi, Renato Gatto, Massimiliano Siccardi, with the musical collaboration of Luca Longobardi, providing visitors with an intense artistic experience.

On the current year, digitalised masterpieces by Picasso, Goya and Sorolla are create a dialogue to the sound of music on the immense limestone surfaces of the Carrières. A veritable invitation to go on a journey of discovery, this original multimedia exhibition, produced by Culturespaces and created by Gianfranco Ianuzzi, Renato gatto, Massimiliano Siccardi, witht the musical collaboration of Luca Longobardi, retraces a century of Spanish painting, providing visitors with an intense artistic experience.

Annex 7 -   GDP Growth Rate

GDP Growth Rate

Year	Portugal	France	Spain	Brazil	Germany	USA
2009	-2.98%	-2.87%	-3.57%	-0.13%	-5.62%	-2.54%
2010	1.90%	1.95%	0.01%	7.53%	4.08%	2.56%
2011	-1.83%	2.19%	-1.00%	3.97%	3.66%	1.55%
2012	-4.03%	0.31%	-2.93%	1.92%	0.49%	2.25%
2013	-1.13%	0.58%	-1.71%	3.00%	0.49%	1.84%
2014	0.89%	0.96%	1.38%	0.50%	2.18%	2.45%
2015	1.82%	1.11%	3.64%	-3.55%	1.74	2.88%
2016	1.93%	1.10%	3.17%	-3.31%	2.24%	1.57%
2017	2.80%	2.26%	2.98%	1.06%	2.16%	2.22%
2018	2.16%	1.72%	2.58%	1.12%	1.43%	2.86%

Source: BdP and The World Bank

Annex 8 -   GDP per Capita

GDP per Capita (values in USD)

Year	Portugal	France	Spain	Brazil	Germany	USA
2009	23,064	41,575	32,334	8,598	41,733	47,100
2010	22,539	40,638	30,737	11,286	41,786	48,467
2011	23,196	43,791	31,835	13,246	46,810	49,883
2012	20,577	40,875	28,564	12,370	44,065	51,603
2013	21,619	42,593	29,212	12,300	46,531	53,107
2014	22,078	43,009	28,623	12,113	48,143	55,033
2015	19,253	36,613	25,817	8,814	41,395	56,803
2016	19,977	36,962	26,622	8,713	42,443	57,904
2017	21,291	38,679	28,208	9,881	44,681	59,928
2018	23,146	41,464	30,524	8,921	48,196	62,641

Source: BdP and The World Bank

Annex 9 -   Gross National Disposable Income per Capita

Gross National Disposable Income per Capita (values in USD)

Year	Portugal	France	Spain	Brazil	Germany	USA
2014	27,218	40,802	33,283	16,309	46,628	54,668
2015	28,131	41,508	34,756	15,769	47,430	56,437
2016	29,075	42,340	36,523	15,295	48,532	57,814
2017	30,487	44,080	38,380	15,603	50,425	59,792
2018	32,023	45,601	40,371	16,111	52,896	62,517

Source: The World Bank

Annex 10 -   Inflation Rate of Consumer Prices

Inflation Rate of Consumer Prices

Year	Portugal	France	Spain	Brazil	Germany	USA
2014	-0.28%	0.51%	-0.15%	6.33%	0.91%	1.62%
2015	0.49%	0.04%	-0.50%	9.03%	0.51%	0.12%
2016	0.61%	0.18%	-0.20%	8.74%	0.49%	1.26%
2017	1.37%	1.03%	1.96%	3.45%	1.51%	2.13%
2018	0.99%	1.85%	1.68%	3.66%	1.73%	2.44%

Source: The World Bank

Annex 11 -   Exchange Rate EUR/BRL

Evolution of the Exchange Rate EUR/BRL
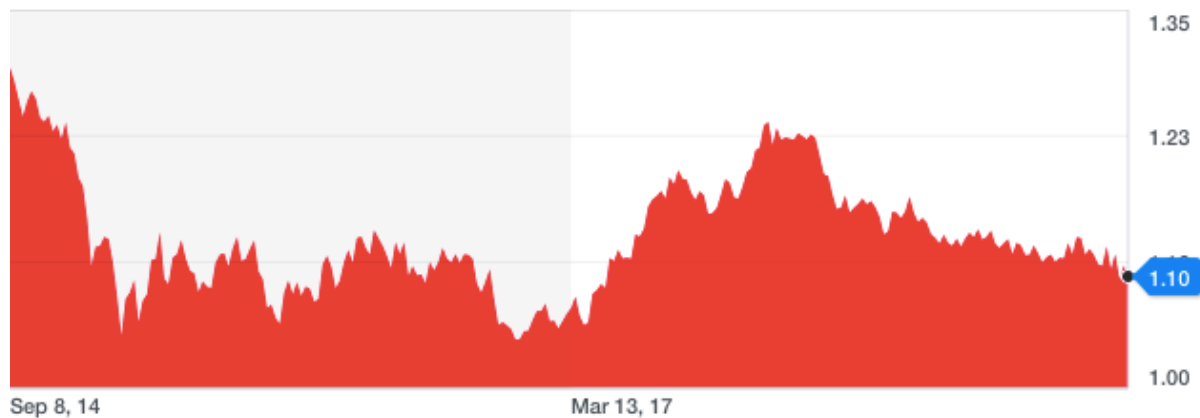
Source: Finance Yahoo

Annex 12 - Exchange Rate EUR/USD

Evolution of the Exchange Rate EUR/USD

Source: Finance Yahoo

Annex 13 - Interest Rates in ECB

Interest Rates in ECB

Year	Day	Deposit Facility	Main Refinancing Operations	
			Fixed Rate	Variable Rate
2016	**16/March**	-0.40	0.00	-
2015	**09/December**	-0.30	0.05	-
2014	**10/September**	-0.20	0.05	-
	11/June	-0.10	0.15	-
2013	**13/November**	0.00	0.25	-
	8/May	0.00	0.50	-
2012	**11/July**	0.00	0.75	-
2011	**14/December**	0.25	1.00	-
	09/November	0.50	1.25	-
	13/July	0.75	1.50	-
	13/April	0.50	1.25	-
2009	**13/May**	0.25	1.00	-
	08/April	0.25	1.25	-
	11/March	0.50	1.50	-
	21/January	1.00	2.00	-

Source: ECB

Annex 14 - Unemployment Rate

Unemployment Rate

Year	Portugal	France	Spain	Brazil	Germany	USA
2014	13.89%	10.29%	24.44%	6.67%	4.98%	6.17%
2015	12.44%	10.36%	22.06%	8.44%	4.62%	5.28%
2016	11.07%	10.06%	19.64%	11.61%	4.12%	4.87%
2017	8.87%	9.40%	17.22%	12,.83%	3.75%	4.36%
2018	6.86%	9.18%	15.49%	12.54%	3.43%	3.93%

Annex 15 - Annual Population Growth

Annual Population Growth
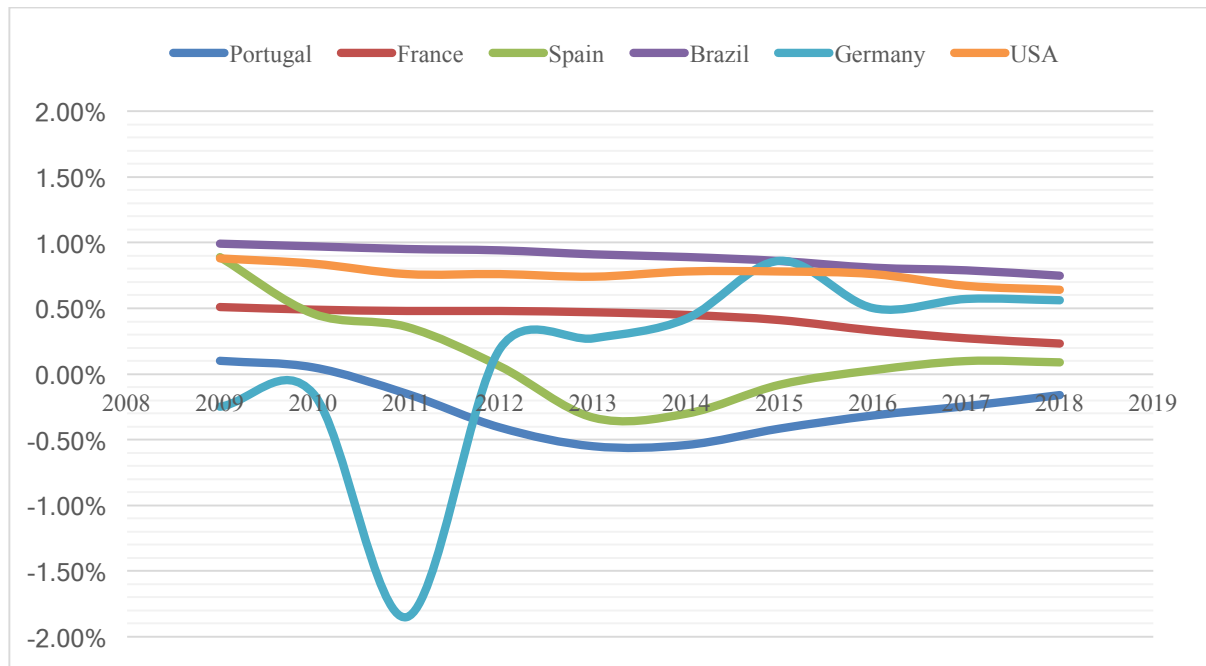
Source: National Statistics Institutes from the Studied Countries

Annex 16 - Crude Birth Rate

Crude Birth Rate

Year	Portugal	France	Spain	Brazil	Germany	USA
2014	7.90	12.40	9.20	14.64	8.80	12.50
2015	8.30	12.35	9.60	14.41	9.00	12.40
2016	8.40	11.70	8.70	14.16	9.60	12.20
2017	8.40	11.40	8.40	13.92	9.50	11.80

Source: National Statistics Institutes from the Studied Countries

Annex 17 - Crude Death Rate

Crude Death Rate

Year	Portugal	France	Spain	Brazil	Germany	USA
2014	10.10	8.50	8.50	6.03	10.70	8.24
2015	10.50	8.90	9.10	6.09	11.30	8.44
2016	10.70	8.90	8.80	6.18	11.10	8.49
2017	10.70	9.00	9.00	6.24	11.30	8.50

Source: National Statistics Institutes from the Studied Countries

Annex 18 - Life Expectancy at Birth

Life Expectancy at Birth (in Years)

Year	Portugal	France	Spain	Brazil	Germany	USA
2014	80.40	82.67	83.23	74.78	81.09	78.84
2015	80.60	82.32	82.83	75.04	80.64	78.69
2016	80.80	82.52	83.33	75.51	80.99	78.54

Source: National Statistics Institutes from the Studied Countries

Annex 19 - Population Pyramid Graph

1. Population Pyramid Graph (Comparison between 2018 and 2028): Portugal
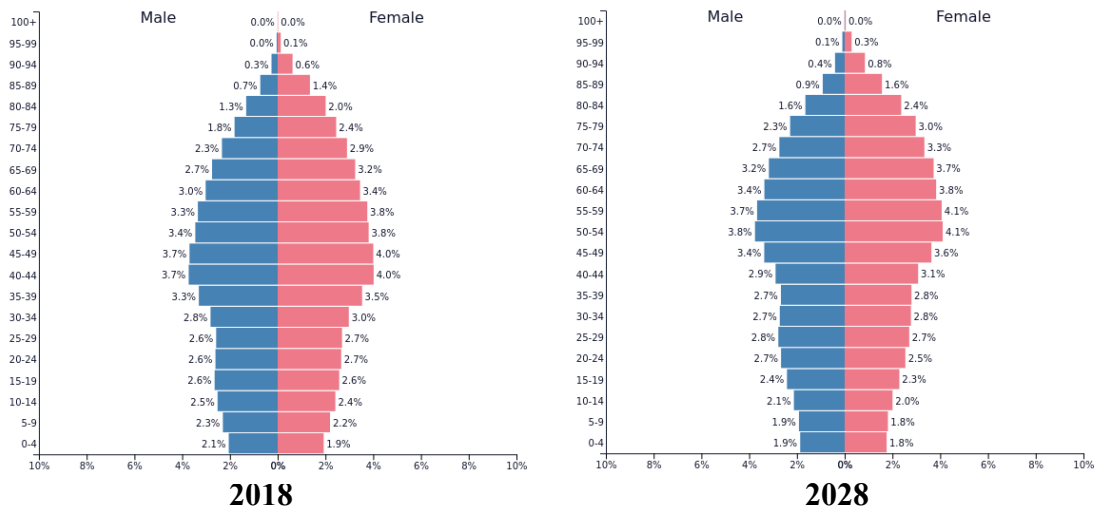
2. Population Pyramid Graph (Comparison between 2018 and 2028): France
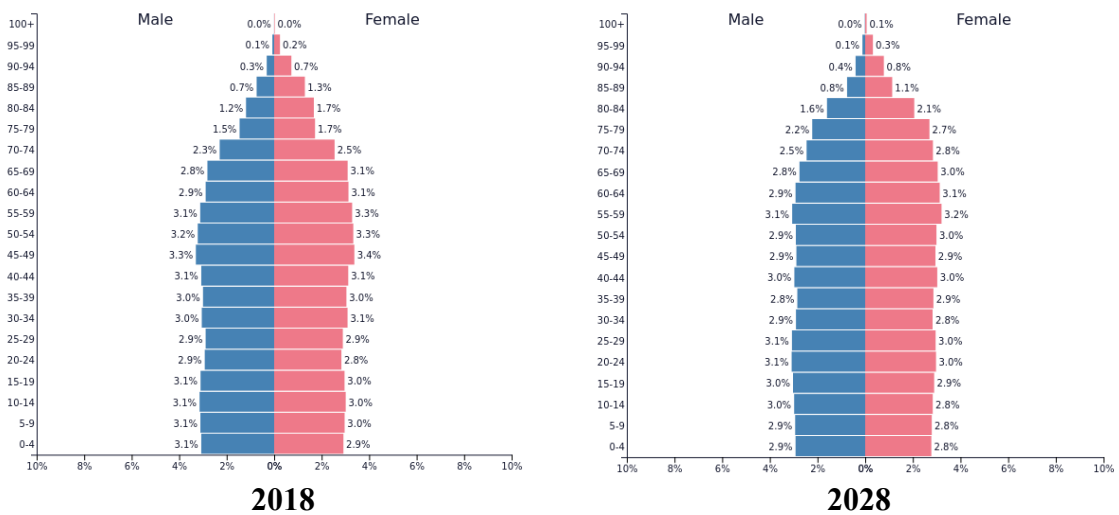
3. Population Pyramid Graph (Comparison between 2018 and 2028): Spain

2018 **2028**

4. Population Pyramid Graph (Comparison between 2018 and 2028): Brazil

2018 **2028**
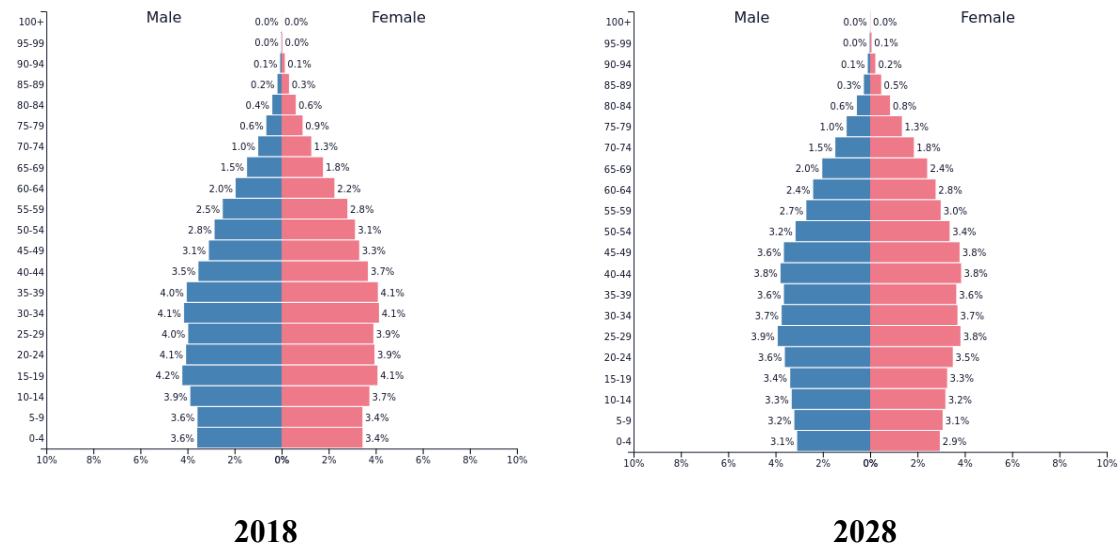
5. Population Pyramid Graph (Comparison between 2018 and 2028): Germany

2018 **2028**
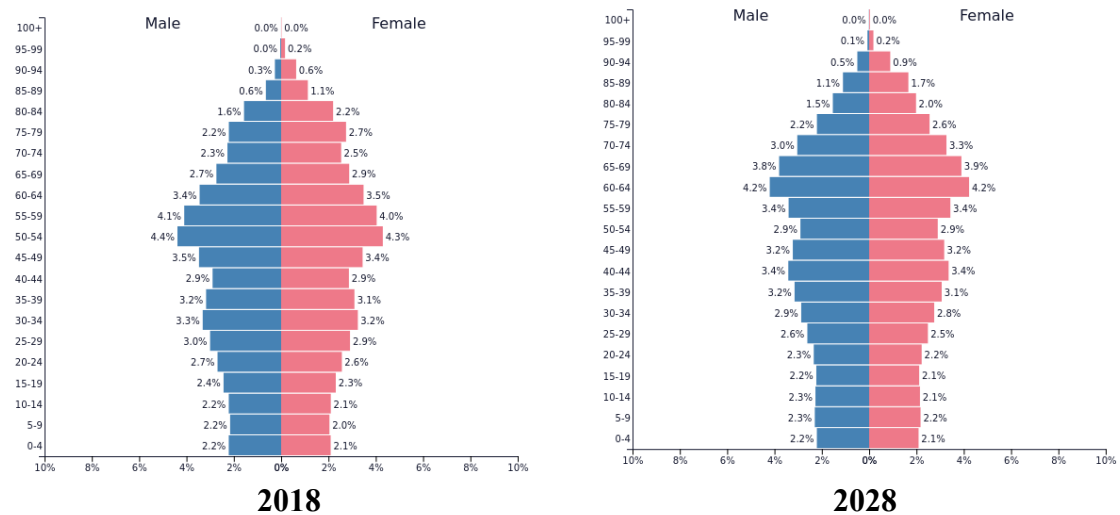
6. Population Pyramid Graph (Comparison between 2018 and 2028): USA

2018

2028
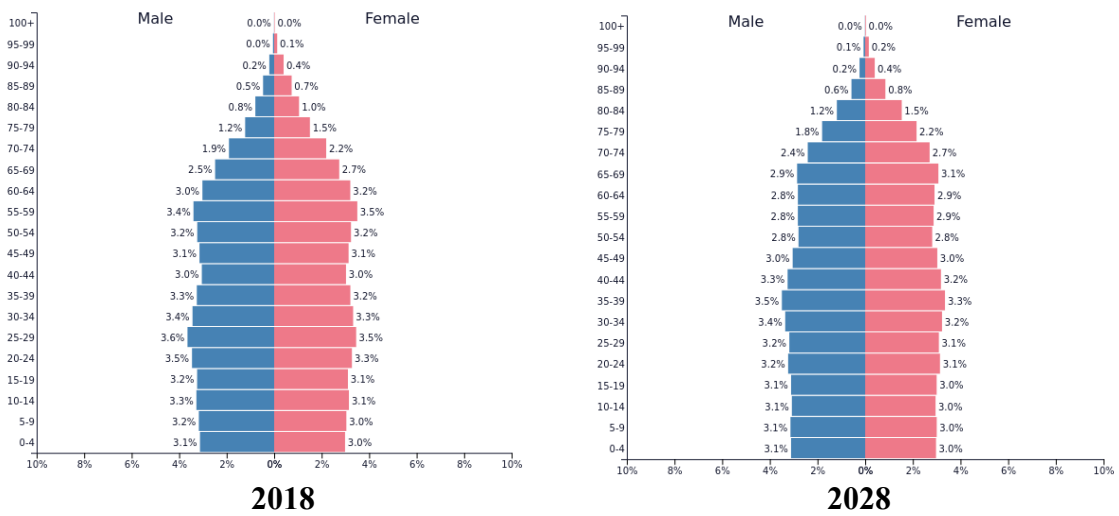
Annex 20 - Survey to the Purpose of Trip 2017 – City of Lisbon

The survey was published by the *Observatório Turismo de Lisboa* in 2017, counting with 5,872 participants (5,358 foreigners and 1,748 nationals) that have been interviewed during the last year.

1. **Motive and Purpose of Trip**

Foreigners:

Motive and Purpose of Trip – Foreigners

Professional Reasons 9.90%

Religion 0.01%

Holidays, Leisure 89.30%

Other 0.30%

Health 0.10%
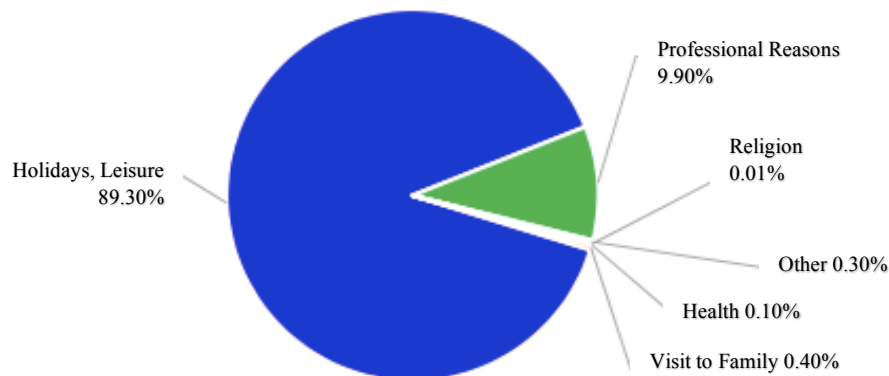
Visit to Family 0.40%

Product	Foreigners
City Break & Short Breaks	79.40%
Sun and Sea	5.70%
Private Business	5.20%
MICE	4.50%
Touring in Portugal	4.10%
Visit to Family/Friends	0.40%
Training	0.10%
Religious Tourism	0.10%
Health	0.10%
Cultural Events	0.04%
Nature	0.02%
Others	0.30%

Source: *Observatório Turismo de Lisboa*

Nationals:

Motive and Purpose of Trip – Nationals

Professional Reasons 58.20%
Other 3.50%
Religion 0.00%
Health 4.90%
Visit to Family 3.50%
Holidays, Recreation, Leisure 30.00%
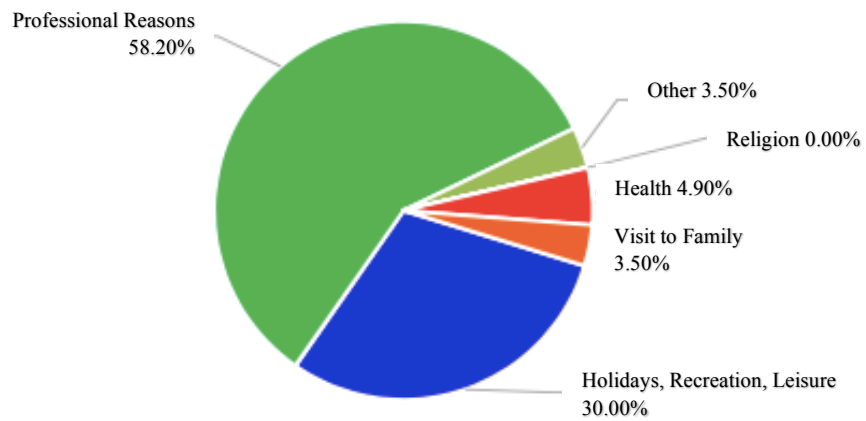
Product	Nationals
City Break & Short Breaks	27.80%
Private Business	26.30%
MICE	22.40%
Training	9.10%
Health	4.90%
Visit to Family/Friends	3.50%
Cultural Events	1.00%
Sport Events	0.60%
Touring in Portugal	0.40%
Incentive	0.40%
Sun and Sea	0.20%
Others	3.50%

Source: *Observatório Turismo de Lisboa*

Total (National and Foreigners):

Motive and Purpose of Trip – Total (Foreigners and Nationals)

Professional Reasons 21.00%

Other 1.00%

Religion 0.30%

Holidays, Leisure 75.60%

Health 0.60%

Visit to Family 1.40%
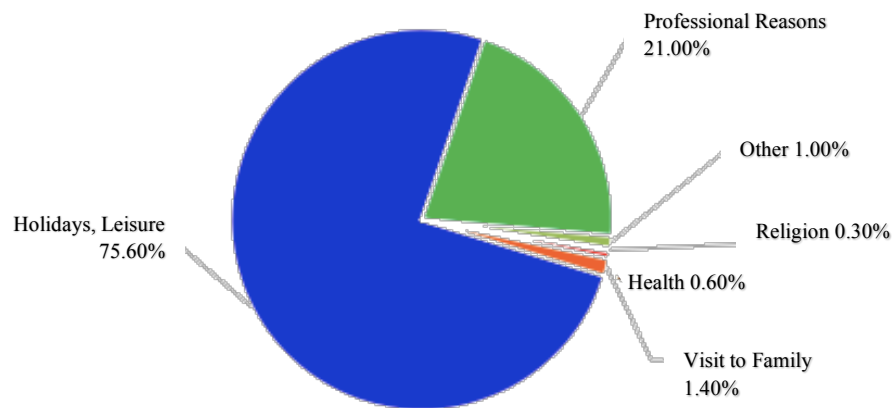
Product	Total
City Break & Short Breaks	67.90%
Private Business	10.80%
MICE	9.30%
Sun and Sea	3.80%
Touring in Portugal	2.90%
VFA	1.40%
Training	1.00%
Health	0.60%
Cultural Events	0.60%
Sport Events	0.30%
Religious Events	0.30%
Incentive	0.03%
Nature	0.01%
Others	1.00%

Source: *Observatório Turismo de Lisboa*

2. Gender

Gender – Total (Foreigners and Nationals)

Female 33.40%	Male 66.60%
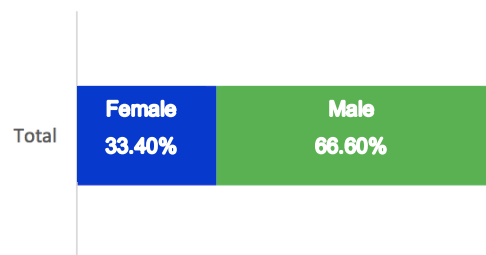
Source: *Observatório Turismo de Lisboa*

3. Age

Age – Total (Foreigners and Nationals)

Age	Percentage
>65	2,5%
56-65	10,9%
46-55	33,9%
36-45	27,7%
26-35	20,5%
18-25	4,6%
<18	0,1%
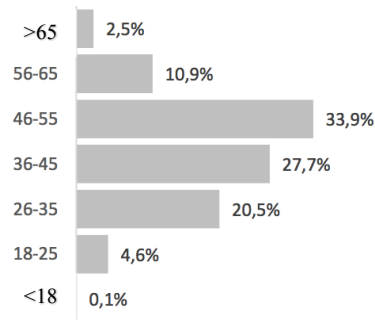
Source: *Observatório Turismo de Lisboa*

4. Academic Level

Academic Level – Total (Foreigners and Nationals)

Level	Percentage
Post-graduation	15,2%
Bachelor Degree	55,4%
High School	28,6%
Elementary	0,7%
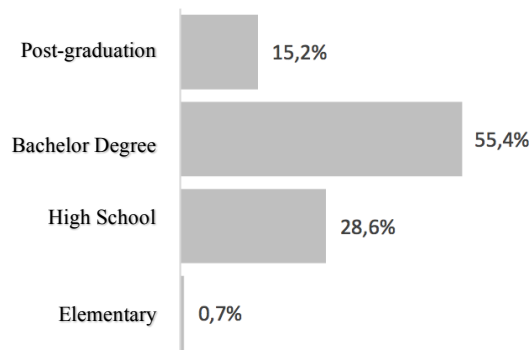
Source: *Observatório Turismo de Lisboa*

5. Travel Preparation

Travel Preparation – Total (Foreigners and Nationals)

Category	Percentage
By Themselves	70,2%
Offer	0,5%
By Employer	18,9%
Friends	0,3%
Travel Agencies - Alone	8,3%
Travel Agencies - Accompanied	1,8%
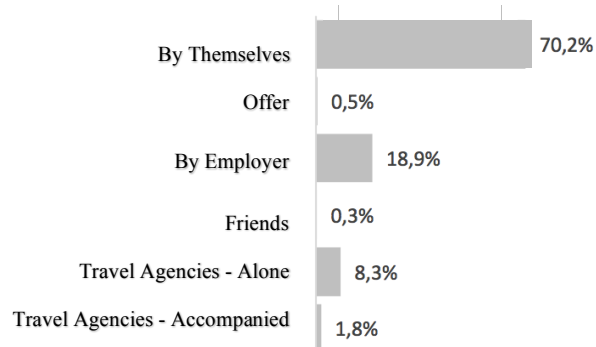
Source: *Observatório Turismo de Lisboa*

6. Use of Internet

Use of Internet – Total (Foreigners and Nationals)

Booking Transport	55,9%
Booking Accommodation	67,8%
Booking Touristic Packages	1,6%
Search Information	66,5%
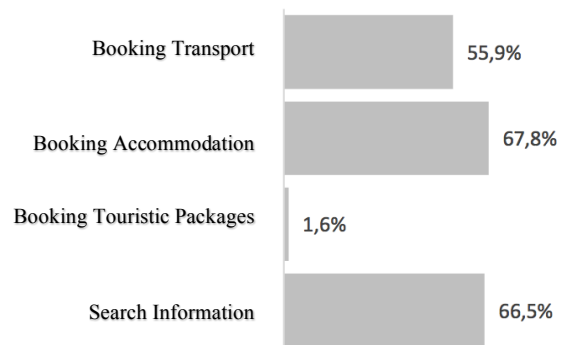
Source: *Observatório Turismo de Lisboa*

7. Transportation to Lisbon

Transportation to Lisbon – Total (Foreigners and Nationals)

Walking	0,2%
Public Bus	0,7%
Touristic Bus	0,2%
Rental Car	2,2%
Private Bus	13,3%
Plane	82,1%
Train	1,2%
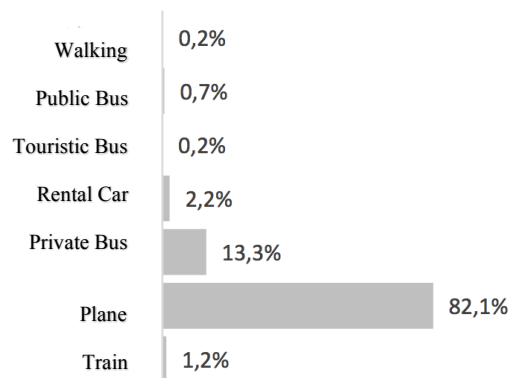
Source: *Observatório Turismo de Lisboa*

8. Travel Companion and Average Stay

Travel Companion and Average Stay – Total (Foreigners and Nationals)

Average Companions (until 10)	1,74
Average Stay in Lisbon (until 10 nights)	3,88
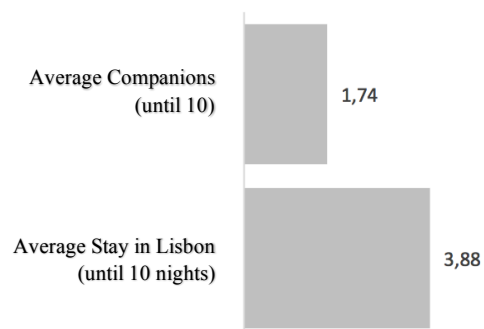
Source: *Observatório Turismo de Lisboa*

9. Average Expenses

Foreigners:

Average Expenses – Foreigners

		FOREIGNERS								
		2016			2017			Variation		
		Leisure	Business	Total	Leisure	Business	Total	Leisure	Business	Total
Average individual expense (without transportation to Lisbon)	Accommodation	€57.19	€84.29	€60.57	€ 64.90	€ 102.91	€68.67	13.5%	22.1%	13.4%
	Food	€37.29	€41.71	€37.78	€ 37.18	€ 44.00	€ 37.87	-0.3%	5.5%	0.2%
	Attractions	€7.14	€2.06	€6.46	€ 7.07	€ 2.02	€ 6.58	-1.0%	-2.1%	1.8%
	Transportation	€6.31	€13.75	€7.25	€ 6.32	€ 14.03	€ 7.15	0.2%	2.1%	-1.4%
	Other	€33.37	€46.90	€35.51	€ 38.41	€ 67.73	€ 42.71	15.1%	44.4%	20.3%
	Global	€141.30	€188.71	€147.57	€ 153.89	€ 230.70	€ 162.98	8.9%	22.3%	10.4%
Average individual expense (without transportation)		€746.25	€665.70	€745.43	€ 842.30	€ 878.06	€ 863.66	12.9%	31.9%	15.9%
Answers		1.339	195	1.559	1.513	249	1.786	-	-	-

Source: *Observatório Turismo de Lisboa*

Nationals:

Average Expenses – Nationals

		NATIONALS								
		2016			2017			Variation		
		Leisure	Business	Total	Leisure	Business	Total	Leisure	Business	Total
Average individual expense (without transportation to Lisbon)	Accommodation	€ 42.07	€ 71.31	€ 54.66	€ 41.48	€ 71.55	€60.07	-1.4%	0.3%	9.9%
	Food	€ 30.92	€ 33.85	€ 31.69	€ 27.56	€ 33.70	€ 30.91	-10.9%	-0.4%	-2.5%
	Attractions	€ 4.73	€ 0.49	€ 2.96	€ 6.17	€ 0.43	€ 2.17	30.5%	-12.5%	-26.6%
	Transportation	€ 1.95	€ 2.45	€ 2.28	€ 3.06	€ 4.10	€ 3.59	57.2%	67.5%	57.6%
	Other	€ 29.80	€ 20.11	€ 25.60	€ 25.32	€ 27.72	€ 33.15	-15%	37.9%	29.5%
	Global	€ 109.47	€ 128.20	€ 117.19	€ 103.60	€ 137.49	€ 129.89	-5.4%	7.2%	10.8%
Average individual expense (without transportation)		€ 471.61	€ 379.25	€ 427.04	€ 468.88	€ 450.91	€ 863.66	-0.6%	18.9%	11.8%
Answers		173	164	383	104	227	387	-	-	-

Source: *Observatório Turismo de Lisboa*

Total (Foreigners and Nationals):

Average Expenses – Total (Foreigners and Nationals)

		TOTAL								
		2016			2017			Variation		
		Leisure	Business	Total	Leisure	Business	Total	Leisure	Business	Total
Average individual expense (without transportation to Lisbon)	Accommodation	€ 55.37	€ 78.50	€ 59.42	€ 43.66	€ 91.68	€54.50	-21.1%	16.8%	-8.3%
	Food	€ 36.52	€ 38.20	€ 36.59	€ 28.45	€ 40.31	€ 40.31	-22.1%	5.5%	-14.6%
	Attractions	€ 6.85	€ 1.36	€ 5.78	€ 6.26	€ 1.45	€ 5.23	-8.7%	6.5%	-9.5%
	Transportation	€ 5.78	€ 8.71	€ 6.28	€ 3.36	€ 10.48	€ 5.17	-41.8%	20.3%	-17.7%
	Other	€ 32.84	€ 34.95	€ 33.58	€ 26.54	€ 53.41	€ 37.51	-19.4%	52.8%	11.7%
	Global	€ 137.46	€ 161.73	€ 141.66	€ 108.27	€ 197.33	€ 133.65	-21.2%	22.0%	-5.6%
Average individual expense (without transportation)		€ 714.17	€ 538.62	€ 684.13	€ 568.63	€ 726.77	€ 651.94	-20.4%	34.9%	-4.7%
Answers		1.512	359	1.942	1.617	476	2.173	-	-	-

Source: *Observatório Turismo de Lisboa*

Annex 21 - Passenger Traffic at Major Portuguese Airports

Number of Passengers in Portuguese Airports

Year	Number of Passengers in Portuguese's Airports				
	Lisbon	Porto	Faro	Other	Total
2008	13,603,616	4,534,829	5,447,200	4,471,211	**28,056,856**
2009	13,265,268	4,508,533	5,062,214	4,314,655	**27,150,670**
2010	14,049,808	5,279,716	5,337,542	4,150,275	**28,817,341**
2011	14,806,537	6,004,500	5,617,688	4,257,465	**30,686,190**
2012	15,314,800	6,051,081	5,674,223	4,041,798	**31,081,902**
2013	16,025,510	6,374,045	5,982,950	4,227,324	**32,609,829**
2014	18,158,588	6,932,614	6,168,868	4,415,821	**35,675,891**
2015	20,110,804	8,088,907	6,439,480	4,961,730	**39,600,921**
2016	22,462,599	9,378,206	7,632,857	5,778,139	**45,251,801**
2017	26,676,552	10,790,271	8,728,876	6,517,488	**52,713,187**

Source: INE

Annex 22 - Passenger Traffic at Portuguese Ports

Passenger Traffic at Portuguese Ports

Regions	Years	
	2016	2017
Total	**1,235,975**	**1,296,370**
Continental Portugal	613,820	646,518
- Port of Leixões	71,799	95,562
- Port of Lisbon	522,501	521,038
- Port of Portimão	19,520	29,702
- Port of Viana do Castelo	-	216
Autonomus Region of Azores	99,680	109,264
- Port of Ponta Delgada	97,044	98,839
Autonomus Region of Madeira	540,588	540,588
- Porto of Funchal	539,192	539,192

Source: INE

Annex 23 - Number of Museums in Portugal

Number of Museums in Portugal

Regions	Years	
	2000	2017
Metropolitan Area of Lisbon	57	85
- Alcochete	1	1
- Almada	1	5
- Amadora	2	2
- Barreiro	-	-
- Cascais	3	6
- Lisboa	32	43
- Loures	2	3
- Mafra	3	3
- Moita	-	-
- Montijo	-	1
- Odivelas	-	-
- Oeiras	1	1
- Palmela	1	1
- Seixal	1	1
- Sesimbra	-	1
- Setúbal	2	3
- Sintra	5	11
- Vila Franca de Xira	3	3

Annex 24 - Number of Museums' Visitors in Portugal

Number of Museums' Visitors in Portugal

Regions	Years	
	2012	2017
Metropolitan Area of Lisbon	4,776,128	8,007,593
- Alcochete	3,289	2,775
- Almada	?	30,258
- Amadora	13,507	9,964
- Barreiro	-	-
- Cascais	?	74,060
- Lisboa	2,850,262	4,514,504
- Loures	-	13,143
- Mafra	?	402,922
- Moita	-	-
- Montijo	6,104	2,019
- Odivelas	-	-
- Oeiras	?	5,719
- Palmela	13,448	16,620
- Seixal	?	33,901
- Sesimbra	149,510	213,452
- Setúbal	53,264	47,636
- Sintra	1,110,345	2,581,039
- Vila Franca de Xira	36,928	59,581

Annex 25 - Competition Analysis

Competition Analysis

Direct Competition	Second Tier Competition
• **Lisbon Story Centre – Memories of the City**	• Ajuda National Palace • *Árpád Szenes-Vieira da Silva Foundation* • *Castelo de São Jorge* • *Chiado's Museum* • Christ the King Shrine and Monument • *Fundação Centro Cultural de Belém* • Gulbenkian Museum • MAAT – Museum of Art, Architecture and Technology • Monument of the Discoveries • *Mosteiro dos Jerónimos* • MUDE – Museum of Design and Fashion • *Museu Coleção Berardo* • *Museu da Electricidade* • *Museu do Ar* • *Museu do Oriente* • National Ancient Art Museum • National Coach Museum • National Museum of Archaeology • National Patheon • NewsMuseum • *Oceanário de Lisboa* • Pavilion of Knowledge • *Torre de Belém* • *Lisbon Zoo*

Source: *Turismo de Lisboa*

Annex 26 - IMMERSIVU's Logo

IMMERSIVU's Logo

Annex 27 - Macro Location – ELECTRE Method

Concordance Matrix

Concordance Matrix	Lisbon	Porto	Alentejo
Lisbon	-	0.75	1.00
Porto	0.25	-	1.00
Alentejo	0.00	0.00	-

Discordance Matrix

Discordance Matrix	Lisbon	Porto	Alentejo
Lisbon	-	0.29	0.00
Porto	0.43	-	0.00
Alentejo	0.43	0.43	-

Superimpose Matrix

Superimpose Matrix	Lisbon	Porto	Alentejo
Lisbon	-	0.75 / 0.29	1.00 / 0.00
Porto	0.25 / 0.43	-	1.00 / 0.00
Alentejo	0.00 / 0.43	0.00 / 0.43	-

Annex 28 - Micro Location – ELECTRE Method

Concordance Matrix

Concordance Matrix	Belém	Historical Centre	Beato
Belém	-	0.29	0.00
Historical Centre	0.71	-	0.43
Beato	1.00	0.43	-

Discordance Matrix

Discordance Matrix	Belém	Historical Centre	Beato
Belém	-	0.67	0.67
Historical Centre	0.00	-	0.67
Beato	0.00	0.67	-

Superimpose Matrix

Superimpose Matrix	Belém	Historical Centre	Beato
Belém	-	0.29 / 0.67	0.00 / 0.67
Historical Centre	0.71 / 0.00	-	0.43 / 0.67
Beato	1.00 / 0.00	0.43 / 0.67	-

Annex 29 - Layout of IMMERSIVUS

Ground Floor:

ENTRANCE   EXIT

MEN'S WC

TICKET
OFFICE

LADIES' WC

ENTRANCE

EXHIBITHION ROOM

MIRRORS
ROOM

AUDIOVISUAL WAREHOUSE
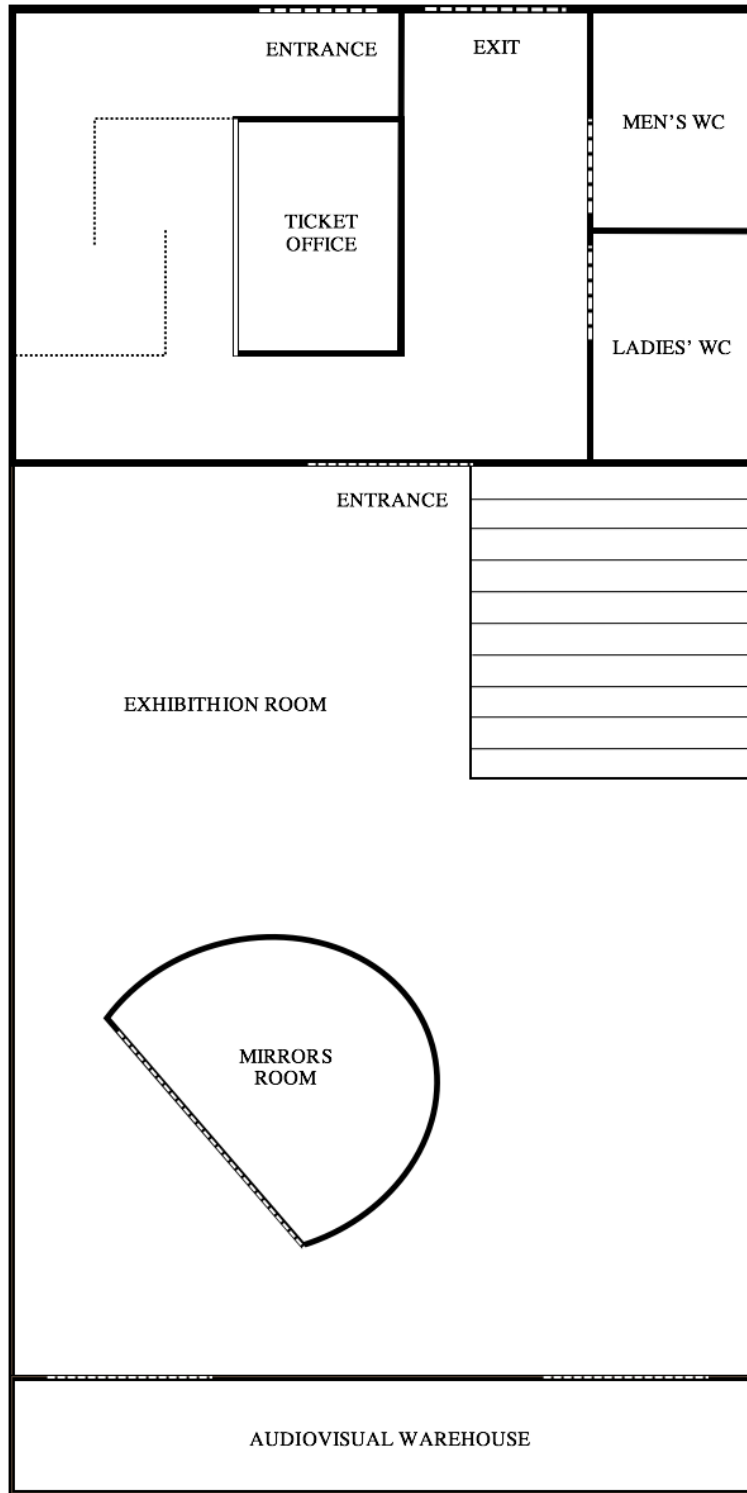
First Floor:
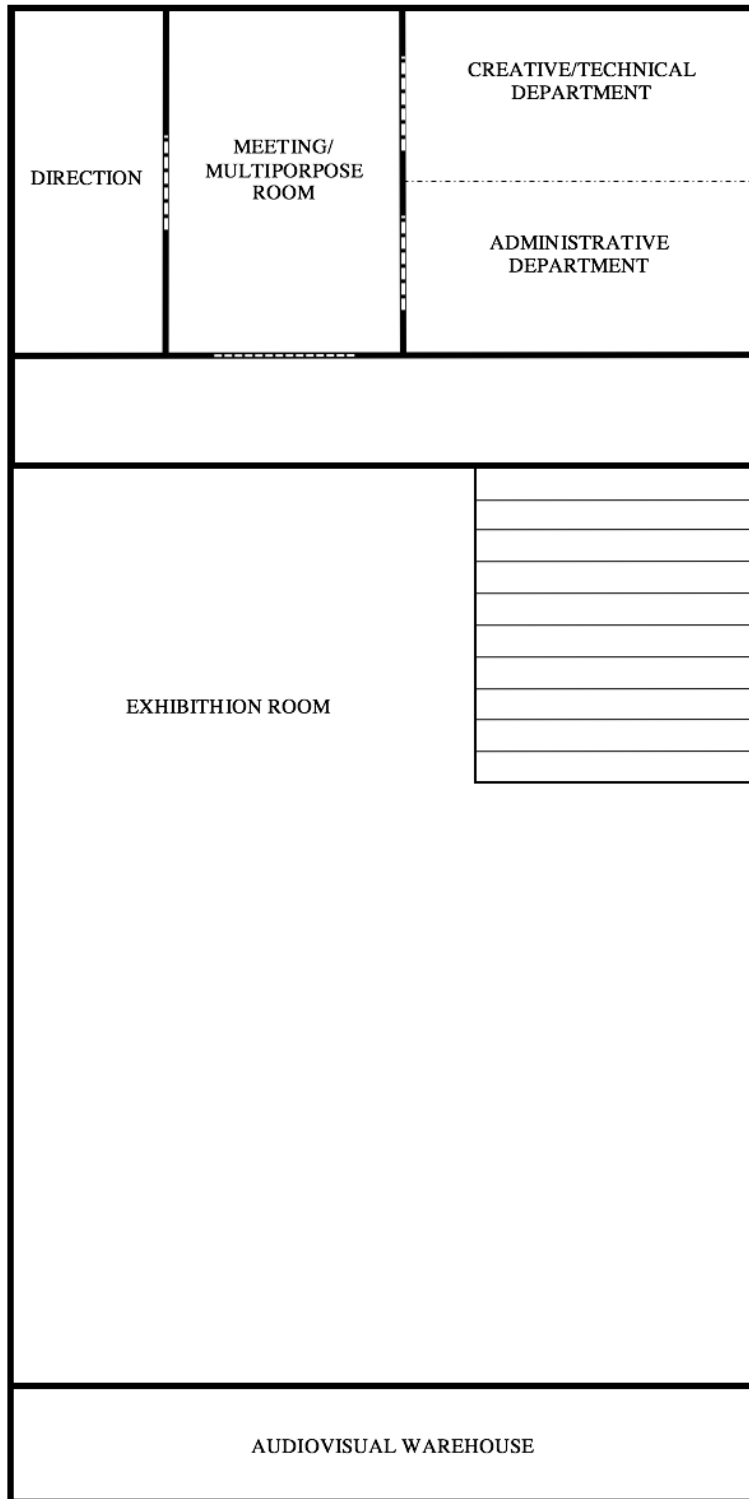
Annex 30 - Organization

1. Work Schedules

The working hours of the museum workers will depend on the nature of the duties they are charged with in order to optimize the allocation of human resources according to the needs of the stakeholders.

The museum is open Tuesday through Thursday from 10h00 to 18h00. Late night opening on Fridays and Saturdays until 22h00 and Sundays until 19h00. The extended weekend schedule seeks to attract more visitors.

Since the company is in an early stage, it makes sense to close our facilities once a week on Monday. Workers shall be entitled to at least one weekly rest day as provided for in the Labour Code (Article 231-1) which corresponds to the day that the museum is closed. However, in the future, if demand so requires, the museum may be opened whole week, in which case the rest days may not coincide with the weekend, as Code of Work (Article 232-2). In sporadic situations, workers may also be asked to be available to work overtime or work over the weekend/holiday and are compensated according to the provisions of the Labour Code (Article 229-1).

Therefore, from Tuesday to Thursday and on Sundays all employees will have an alternating schedule between 9h00 and 18h00 or 10h00 and 19h00, and the periods between 9h00 and 10h00 and 18h00 and 19h00 will be essentially for maintenance and adequate preparation for guarantee the preparation necessary to guarantee the functioning of the museum. On Friday and Saturday all employees have an alternating schedule between 9h00 and 18h00 or 15h00 and 23h00.

The employees will be entitled to a variables lunch or dinner time, with the possibility of being between 12h00 and 13h00 or between 13h and 14h and in the case of the dinner between 19h00 and 20h00 or 20h00 and 21h00, so that the services of the museum are guaranteed. The employees will be entitled to 20 minutes of rest, however there should be collaborators who guarantee the operation of the museum. Ideally, these pauses should be agreed between the workers, however, in case of disagreement, they will be defined a priori by the director to avoid possible conflicts.

It should be noted that all these topics will be further specified in an employment contract agreed by both parties.

2. Holiday Policy

Holidays are marked by agreement between the employer and the employee. If both parties cannot reach an agreement, the employer can schedule the employee's holiday, "listening to the workers committee or, failing that, the inter-union commission or the representative committee of the worker concerned", as explained in Article 241 of the Labour Code.

3. Salary Policy

The remuneration policies adopted by the museum are developed taking into account the sense of justice as well as ensuring the high level of motivation of the employees enabling a remarkable productivity. Thus, the sensorial museum chooses a remuneration policy of a hierarchical nature, that is, the salary will be defined and agreed upon based on the employee's role and its specialization inherent to it.

The value of the remuneration of the staff was based on the salaries of a national company of cultural entertainment units as well as the average salary per position in the Lisbon region. Thus, through this merger was determined the remuneration per position, having a notable competitive component with the purpose of attracting and retaining the best employees.

As decreed for the State Budget of 2019, the food allowance of € 4.77 is added to the employees salary.

4. Performance Evaluation

The performance evaluation allows to have a global and objective view regarding the tasks performed by each of our employees, for a certain period and according to the established criteria. This analysis allows the identification of the strengths and weaknesses of each worker, in terms of skills and behaviour.

The methods of performance evaluation used by the museum will be as follows:

- Personality traits;
- Behaviours;
- Competency management;
- Comparison with others;
- Orientation to results.

The sources of performance evaluation are included in the 360-degree evaluation, since employees are the target of personal observation, by superiors, colleagues, subordinates and stakeholders.

5. Training

The museum provides specialized training for certain employees, according to the needs of the entity. The formations are mainly internal and each worker is allocated to the training that best fits with their functions in the company.

The creative/technical department will be entitled to a training of working standards and operation of the technological equipment used in the museum, thus informing the operators how to proceed and explaining how to carry out the exhibitions.

The sales/commercial department will be entitled to a negotiation training and a customer service and managements procedure guide.

The administrative department will also have training of labour standards, as well as informative formations of accounting and taxation.

Annex 31 - Project Planning and Implementation

1. Business Plan Elaboration and Decision Making

After identify an idea of business, it is important to develop a business plan to support it. At this point, it is necessary to collect and analyse information about the environment (internal and external), the industry, competition, demand and supply according to the defined concept. This data is crucial to prepare a project financial analysis and evaluation, allowing an accurate decision making.

2. Creation of the Company

The company can be created through the platform *Empresa na Hora*, following the quick and easy process:

- Define the company's name and select a pre-approved *Pacto Social*;
- Constitute the company at any point of service *Empresa na Hora*;
- Deposit the amount of share capital in an available bank account with the name of the company within 5 working days after the incorporation of deliver the amount in the coffers of the company until the end of the first financial year;
- Indicate a *Contabilista Certificado* or choose one from the *Bolsa de Contabilistas Certificados* to deliver a Statement of Start-up of the Activity, due to tax purposes.

3. Selection and Negotiating of the Building

For this business plan was considered a pre-approved agreement with Beato Creative Hub for the transfer of use of its facilities in return for the allocation of a part of the museum's billing. The details of this agreement with the Beato Creative Hub have been described in chapter 15. The referred facilities require requalification works with a total cost of € 160,000.00, including all the construction and license costs.

4. Confirmation of the License for the Exercise of the Activity

Before proceeding with any formality, it is necessary to confirm if he potential property fulfils the requirements to be explored. Consequently, it must be requested the permanent certificate of property registration.

5. Negotiate the Financial Loan Conditions

At this level it is important to present the business project to the financial institutions and banks and analyse their offered conditions in order to negotiate and choose the most advantageous proposal for the financing of the project.

6. Municipal License

Before proceed with the requalification works, the City Hall of Lisbon has to approve the project and give the building license for the construction. The license costs are included in the requalification value mentioned on the point 3.

7. Architecture and Engineering Project Execution

After the final approval of the City Hallo of Lisbon, the architecture an engineering project of execution needs to be developed, changing and completing the original plan according to the alterations required by the City Hall, as well as, defining the necessary materials and next steps to the execution of the project.

8. Building Rehabilitation

The rehabilitation of the facilities of the museum will have multiple phases, being predicted a duration of between four and five months.

9. Research of Equipment and IT Suppliers

10. Contract with Equipment and IT Suppliers

11. Recruitment Process of Staff

The museum needs to hire employees according to the defined in the chapter 13.

12. Final Inspection and Business License

Finished the works of rehabilitation, it is necessary to carry out an inspection in order to verify if it is everything in accordance with the presented project. If affirmative, the museum has the right conditions to start, being required an authorization for tourism purposes. It is estimated a deadline of 20 days between the City hall authorization decision and the issuance of the respective license.

13. Training

They will be admitted two weeks before the museum's opening, allowing the development of a personal training regarding the values, rules and procedures of the museum, as well as, the software used in their functions. Thus, the training program will be faced by the General Manager and by the equipment suppliers.

14. Promote and Communicate the Museum's Opening

Before starting the business activity, the museum will be promoted through the institutional website, social networks and through press release, informing the media about the opening of the museum.

15. Museum's Opening

According to the planning, the predicted date to the open of the Hotel is 1st of May of 2020.

Annex 32 - VAT Rates

VAT Rates

VAT Rates	
Sales	
Museum Entrance Tickets	6%
Assets	
Fixed Assets	23%
Services	
Facilities	23%
Outsourcing Services	23%
Other Expenses	23%

Annex 33 - Depreciations and Amortizations

Depreciations and Amortizations

Depreciation of Tangible Assets	Life Cycle (Years)	%
Furniture	10	10.00%
Machinery, Equipment and Appliances	5	20.00%
Computers	3	33.33%
Projectors	5	20.00%
Audio Systems	5	20.00%
Extras (Cables and Other Multimedia Equipment)	3	33.33%
Amortization of Intangible Assets	**Life Cycle (Years)**	**%**
Institutional Website	3	33.33%

Annex 34 - IRS Retention Rate

IRS Retention Rate

Role	Gross Salary	IRS Tax
Director	€2,000.00	22.60%
Creative Director	€1,500.00	17.80%
Commercial	€1,500.00	17.80%
Administrative Director	€1,500.00	17.80%
Creative Technician	€1,200.00	14.60%
Administrative	€1,000.00	11.70%
Administrative	€1,000.00	11.70%

Annex 35 -   Real Estate Investment

Year	\"Bilhete Inteiro\"	\"Bilhete Reduzido\"	\"Bilhete Promo\"	\"Bilhete Escola\"	Total
Sales by Type of Entrance Ticket					
2020	14,166	6,044	504	94	**20,808**
2021	19,507	8,323	693	129	**28,652**
2022	24,871	10,612	884	165	**36,532**
2023	30,442	12,989	1,082	202	**44,715**
2024	37,261	15,898	1,325	247	**54,731**
2025	41,807	17,838	1,486	277	**61,408**
2026	46,907	20,014	1,667	311	**68,900**
2027	52,630	22,455	1,871	349	**77,306**
2028	56,367	24,050	2,004	374	**82,794**
2029	60,369	25,757	2,146	401	**88,673**

Annex 36 -   Equipment and Other Investments

1. Furniture

The furniture will be tailored to the museum's facilities. This investment was divided into four areas of the museum: entrance (ticket office), exhibition rooms, office and audio-visual warehouse.

- Entrance (Ticket Office)

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €) 2020
Counter	1	488	600
Bookshelf	1	610	750
Chairs	2	98	240
Total	**-**	**-**	**1,590**

- Exhibition Rooms

Item	Units	Unit Price (Excluding VAT)	Annual Cost 2020
Seats	8	244	2,400
Total	**-**	**-**	**2,400**

- Office

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €) 2020
Meeting Desk	1	305	375
Chairs	5	106	650
Chairs	4	41	200
Desk	5	142	875
Bookshelf	3	518	1,910
Sideboard	1	406	499
Total	**-**	**-**	**4,509**

- Audio-visual Warehouse

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €) 2020
Bookshelf	10	142	1,750
Total	**-**	**-**	**1,750**

2. Interior Design

It was considered a cost of € 14,000.00 in 2020 relatively of interior design works, so the museum's facilities are as functional as possible for our visitors.

3. Machinery, Equipment and Appliances

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €)	
			2020	2025
Printer HP	2	49	121	129
Printer HP	2	117	288	309
Coffee Machine	1	57	70	75
Microwave	1	130	160	171
Mini Fridge	1	121	148	159
Total	**-**	**-**	**787**	**844**

4. Computers

The use of computers is vital for the development of the museum's activity, since it offer immersive audio-visual experiences. Regarding computers, it is important to note that the computers used by the museum's artistic department have certain require technical specificities, which other administrative workers do not need. In this way, the computers of the artistic department need to have more strong graphics card since the projection mapping is a graphically intensive process. However, a good graphics card is useful only if the computer to which it is attached can provide sufficient information, especially if the information is being generated in real time. So, a good processor and plenty of memory are mandatory.

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €)			
			2020	2023	2026	2029
Apple MacBook 13''	4	1,707	8,396	8,754	9,126	9,515
Apple iMac 21.50''	3	1,097	4,047	4,219	4,399	4,586
Apple iMac 27''	2	1,950	4,798	5,002	5,215	5,438
Apple MacBook 12''	2	1,260	3,100	3,232	3,369	3,513
Total	-	-	**20,341**	**21,207**	**22,110**	**23,052**

5. Projectors

The projector is probably the most important equipment in projection mapping. It is possible to have the best visuals stored on the computer but if the projector is not good enough, it will be impossible to convey a genuine experience. There are three key aspects to consider when choosing the projector, namely:

I. *Brightness* – corresponds to the amount of light the projector produces. This is one of the most critical parameters in choosing the projector and can be the deciding factor in the projection of the illusion of the image.

II. *Resolution* – most projectors offer a range of resolutions choices. High resolutions will provide better projections but require projected images to be properly encoded. The most important detail to note is the need to match the resolution of the projector to the resolution of the image.

III.   *Projection Distance* – the projector lens will dictate the size of the projected image relative to the projection distance. Generally, this information is provided by the material producer.

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €)	
			2020	2025
Projector Epson	16	10,160	199,949	214,343
Projector Epson	4	6,500	31,980	34,282
Stacking Frame	16	6,585	129,593	138,922
Stacking Frame	4	3,252	16,000	17,152
Technical Assistance	-	1,480	1,820	1,951
Total	**-**	**-**	**379,342**	**406,650**

6. Media Servers

The media servers establish the bridge between the control software and the output devices such as projectors and led walls. It is important to note that different types of media servers are suitable for different applications. Each media server used in the museum has a cost of approximately € 4,000, which enables to turn computers into a full-fledged media servers capable of running live or programmed HD video shows in sync with sound and light.

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €)	
			2020	2025
Server	4	4,065	20,000	20,000
Total	**-**	**-**	**20,000**	**20,000**

7. Audio Systems

Like lights and projections, sounds are also responsible for manipulating our emotions, directing them to what the somnolent seeks. Therefore, sound and content are complementary and equally important items when it comes to producing that will excite, engage and increase the reach of your company.

The music and other sound elements are determinant for the construction of the image that forms in the mind of the listener. In this sense, our artistic team needs to develop a wide knowledge in techniques of recording, mixing and special effects in order to create unique and interesting sounds that further enhance our exhibitions.

The following table summarizes the sound equipment and its costs:

Item	Units	Unit Price (Excluding VAT)	Annual Cost (in €) 2020	Annual Cost (in €) 2025
System PRO	10	690	8,487	9,098
System PRO	4	340	1,673	1,793
Total	**-**	**-**	**10,160**	**10,891**

8. Extras (Cables and Other Multimedia Equipment)

- Cables

Item	Units	Unit Price (Excluding VAT)	2020	2023	2026	2029
Audio Cables	100	0.76	93	97	102	106
Power Cables	100	0.95	117	122	127	132
DisplayPort Cables	50	9.90	609	635	662	690
HDMI Cables	50	2.05	126	131	137	143
RF Cables	100	1.61	198	206	215	224
Video Cables	100	1.89	232	242	253	263
Total	**-**	**-**	**1,376**	**1,434**	**1,495**	**1,559**

- Other Multimedia Equipment

Item	Units	Unit Price (Excluding VAT)	2020	2023	2026	2029
Wireless LAN Adapter	20	100	2,460	2,565	2,674	2,788
HDBaset Transmitter	20	447	10,996	11,465	11,953	12,462
3D Polarizer	4	366	1,800	1,877	1,957	2,040
Total	**-**	**-**	**15,256**	**15,906**	**16,583**	**17,290**

9. Computer Software

The software chosen for our artistic team was Madmapper, which is adapted for various fields, such as architectural video projection, art installations, stage design and live show. It translates into an annual agreement amounting of € 2,075.00.

10. Industrial Property

- Institutional Website

The museum's website will be simple and user-friendly to optimize the visitor experience. The website offers updated information as well a system for make reservations and buying tickets online. The supplier of the website will be Data Source – Web Solutions, since it offers the best relation quality price for the creation of website with reservation system of tickets for the museum.

Item	Annual Cost (in €)			
	2020	**2023**	**2026**	**2029**
Standard Website				
Website License	1,450	1,512	1,576	1,643
Bilingual Contents (Portuguese and English)	2,200	2,294	2,391	2,479
Graphic Design	4,938	5,149	5,368	5,597
Newsletter Design	400	417	435	453
Management of User Through Login	1,599	1,667	1,738	1,812
Widget Integration Module	400	417	435	453
Form Construction Module with Automatic Sending of Mail	1,200	1,251	1,304	1,360
Dedicated IP	480	500	521	544
Security Certificate with Dedicated IP	99	103	107	112
Mobile Website				
Website License	1,980	2,064	2,152	2,244
Ticketing Engine				
Online Platform	739	770	803	837
Others				
Creation of APP's	652	680	709	739
Content's Compatibility with APP's	250	261	272	283
Total	**13,322**	**17,084**	**17,812**	**18,557**

11. Financial Charges

- ATP Commissions

The use of APT represents a cost of 0.75% of the total amount of payments made by bank card. For the calculation of APT commissions, it was assumed that 75% of the payments' of our customers is made by bank card.

Annex 37 - Cost of Facilities and Outsourcing Services

The museum needs some services to support its core business, however, because it is not advantageous to carry them out internally, it was decided to subcontract external entities. Thus, the sensorial museum will contract the following services:

- *Electricity*: it was estimated a monthly cost of €706.00 for the museum's operation.

- *Water*: it was estimated an annual cost of €880,00 for the consumption of water in the museum's facilities.

- *Accounting*: the accounting services represent a monthly fee of €920.00 (including VAT).

- *Cleaning*: it was considered an annual cost of €7,260.00 for the cleaning services for the museum.

- *Communications*: was chosen a package of communication including channels of television, internet and phone services for national and international fixed networks, which translates into a monthly fee of €55.00.

- *Information Technology (IT)*: the museum will use the Primavera software to integrate all its accounting and financial information, which translates into an annual fee of €1,000.00 including VAT.

- *Insurance*: given the touristic nature of its business, the museum should have multi-risk and liability insurance. The multirisk insurance covers cases of equipment malfunction, floods, electric hazards, storms and includes the National Fire Service and Civil Protection, the stamp of policy and the INEM. Already, the civil liability insurance has a deduction of 10% of the damages, covering at least n amount of €250. These two insurances cost almost €12,000.00 per year.

- *Litigation and Notary*: there is a fee of €600.00 regarding the follow-up of the company's incorporation process. In addition, the process of incorporation of company in the selected notary office has a cost of €300.00.

- *Maintenance*: regarding to maintenance it was considered a cost of 0.10% of the total revenue amount.

- Marketing Promotion: it was considered an annual cost of €20,000.00 for communication and marketing policies of the museum.

- *Office Material*: it was considered an annual cost of €1,000.00, assuming an efficient use of the resources during that analysis period, maintaining the same consuming level of these goods.

- *Representation Expenses*: a monthly cost of representation expenses of €490.00 was estimated for the purpose of representing the museum with third parties, whether customers, suppliers or other partners.

- *Safety*: for safety it was considered a monthly fee of €4,000.00 for 24 hour monitoring service. In this business plan, it was assumed that this amount remains

constant. However, the amount under this heading may increase if the opening hours of the museum need to be extended.

- *Other Expenses*: for other services, it was estimated a cost of 0.50% of the total revenue amount.

Annex 38 - Payroll

- *Remuneration*: the staff employed by the museum is defined in the Point 14 – Organization, as well as the salary values for each defined position. It is important to note that for the annual payroll costs it was considered 112 months of work plus 2 months of subsidy (Holidays and Christmas).

- *Social Security Tax*: according to the *Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social*, the Portuguese companies need to pay a social security contribution of 23.75% per employee. At the same time, the employees have a social security tax of 11%.

- *Food Allowance*: for the analysis, it was considered that all employees receive €4.77 per day for their meals.

- *Labor Medicine and Worker's Insurance*: It was considered a monthly value of €20.00 per each employee hired.

- *Training Expenses*: it was considered an annually of €300.00 per hired employee in the first year.

- *Other Payroll Expenses*: it was considered an extra value of 1.00% of the annual remuneration amount.

Annex 39 - Other Operational Costs

- *ISO 9001 Certification:* it was considered an annual cost of €2,000.00 relative to ISO 9001 quality certification that helps the museum develop and improve its performance by demonstrating high levels of quality when offering their contract proposals.

- *Other Operational Expenses:* it was considered an extra value of 1% of the annual revenue amount.

Annex 40 -   Key Performance Indicators

Key Performance Indicators (values in €)

Key Performance Indicators	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Economic Indicators										
EBIT	(175,049)	(76,884)	12,783	105,104	220,206	289,555	373,455	469,143	529,798	594,234
Sales	250,553	345,011	439,890	538,425	659,032	739,434	829,645	930,862	996,953	1,067,736
Operational Profit	(70%)	(22%)	3%	20%	33%	39%	45%	50%	53%	56%
Net Income	(175,049)	(110,925)	(17,164)	79,373	132,824	214,048	283,509	362,381	413,875	466,619
EBITDA	(52,299)	45,896	135,592	228,862	343,995	418,994	503,884	599,603	660,290	725,754
Profit Margin	335%	(242%)	(13%)	35%	39%	51%	56%	60%	63%	64%
Economic-Financial Indicators										
Net Income	(175,049)	(110,925)	(17,164)	79,373	132,824	214,048	283,509	362,381	413,875	466,619
Investment	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
ROI	(9%)	(6%)	(1%)	4%	7%	11%	14%	18%	21%	23%
Net Income	(175,049)	(110,925)	(17,164)	79,373	132,824	214,048	283,509	362,381	413,875	466,619
Assets	561,067	471,271	389,967	384,100	321,490	698,842	715,339	670,481	631,538	671,335
Net ROA	(31%)	(24%)	(4%)	21%	41%	31%	40%	54%	66%	70%
Net Income	(175,049)	(110,925)	(17,164)	79,373	132,824	214,048	283,509	362,381	413,875	466,619
Equity	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
ROE	(22%)	(14%)	(2%)	10%	17%	27%	35%	45%	52%	58%
Financial Indicators										
Equity	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
Assets	561,067	471,271	389,967	384,100	321,490	698,842	715,339	670,481	631,538	671,335
Equity Ratio	143%	170%	205%	208%	249%	114%	112%	119%	127%	119%
Debt	-	-	1,200,000	1,065,843	926,996	783,925	636,503	484,598	328,071	-
Equity	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
Debt-to-Equity Ratio	-	-	150%	133%	116%	98%	80%	61%	41%	-
Liquidity Indicators										
Current Assets	1,284,357	1,130,580	1,056,248	1,001,298	1,189,875	857,296	1,004,521	1,302,654	1,611,247	2,045,126
Current Liabilities	1,220,473	1,087,825	949,354	806,663	796,448	625,380	507,278	403,806	267,796	285,715
Current Ratio	105%	104%	111%	124%	149%	137%	198%	323%	602%	716%