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**OUREANAFIN GROUP**

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**Oureanafin and the struggle against bankruptcy**

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**Title:** Oureanafin group: Oureanafin and the struggle against bankruptcy

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## **RESUMO**

Este documento está dividido em três partes principais: o estudo de caso, a revisão bibliográfica e as linhas orientadoras para resolução do caso.

Na primeira parte é descrito um caso real de um grupo de empresas portuguesas que operam maioritariamente no sector da construção, Oureanafin, desde o momento da sua formação até ao momento em que começou a apresentar problemas financeiros.

Sentindo na pele as consequências da crise financeira mundial com enormes repercussões ao nível do sector da construção, e após o segundo processo em tribunal por parte de um credor por falta de pagamento, em 2011 a maior empresa do grupo – Aquino Construções, S.A. – sentiu-se forçada a abrir falência. Como uma bola de neve, e tendo em conta que as outras duas empresas mais importantes do grupo dependiam financeiramente da Aquino, a Casur Construções, S.A. e a Tresa – Construções do Algarve, S.A. ficaram numa situação debilitada, levando à necessidade de “reinventar” o seu negócio.

É com este objectivo que a equipa de gestão do grupo se reúne em Dezembro de 2011, discutindo todas as opções possíveis para poder resistir a um período quase avassalador.

A secção da revisão bibliográfica descreve os modelos e teorias desenvolvidas por vários autores que são cruciais para a análise deste caso e das questões colocadas no final do estudo de caso.

A terceira secção incorpora a visão da autora do que poderia ser uma opção de resposta para discussão das questões colocadas, não sendo essas as únicas respostas possíveis.

## **ABSTRACT**

This document is divided into three main parts: the case study, the literature review and the teaching notes.

The first part describes a real case of a group of Portuguese companies (Oureanafin), operating mainly in the construction sector, from the moment of its creation until the moment it started to face financial problems.

Facing the impact of the global financial crisis and the enormous repercussions in the construction sector, and after the second court proceedings initiated by a creditor for lack of payment, in 2011 the largest company in the group - Aquino Construções, S.A. - filed for bankruptcy. As a snowball, and because they depended financially from Aquino, the other two major companies in the group (Casur Construções, S.A. and Tresa - Construções do Algarve, S.A.) found themselves in a rather fragile economic situation which forced them to "reinvent" their business.

It is with this aim that the Group's management team meets in December 2011, discussing all possible options to overcome this difficult period.

The literature review section describes the models and theories developed by various authors that are crucial in the analysis of this case and the questions placed at the end of the case study.

The third section incorporates the author's proposal for possible (but not exhaustive) answers to the questions proposed for class discussion.

## **ACKNOWLEDGEMENTS**

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# TABLE OF CONTENTS

Case Study.....	8
Preamble .....	8
The Foundation .....	8
Recession In Portugal.....	10
The Snowball In The Oureanafin Group.....	11
Oureanafin Group – The Major Three .....	13
The Ultimate Meeting Of The Board.....	15
Overview .....	21
Appendices .....	22
<i>Appendix I: Structure Of The Company Before Bankruptcy .....</i>	22
<i>Appendix Ii: Main Economic Indicators In Portugal From 2005 To 2011 .....</i>	23
<i>Appendix Iii: Structure Of The Company In 2011.....</i>	23
<i>Appendix Iv: Some Of The Most Relevant Constructions Of Aquino Construções, S.A.....</i>	24
Literature Review.....	27
Environmental Analysis.....	27
<i>Macro-Analysis .....</i>	27
<i>Micro-Analysis.....</i>	29
<i>Micro And Macro Analysis .....</i>	30
Competitive Advantage.....	30
Diversification.....	32
Vertical Integration.....	33
Net Present Value.....	34
Teaching Notes.....	35
Synopsis.....	35
Suggested Questions.....	36
Objectives.....	37
Case Analysis .....	37
1. <i>How Would You Describe Oureanafin’s Strategy Over The Years? .....</i>	37
2. <i>Characterize The Option The Board Is Considering For Aquino, Taking Into Account That The Insolvency Plan Is Already Approved And The Company Has The Necessary Financial Support.....</i>	41

3. <i>Concerning The Option The Board Is Considering For Casur, How Would You Characterize In Terms Of Strategic Diversification And Competitive Advantage?</i> .....	50
4. <i>Regarding Tresa, Which Option Do You Consider To Be The Best: To Liquidate The Company Or To Restructure The Business And Implement An Insolvency Plan?</i> .....	51
<b>Conclusion</b> .....	55
<b>Limitations</b> .....	56
<b>References</b> .....	57

## TABLE OF FIGURES

<b>Figure 1:</b> Number of firms operating in WWTP segment by contracted price level and geographical area .....	16
<b>Figure 2:</b> Secondary clarifier.....	18
<b>Figure 3:</b> Differentiation options.....	32
<b>Figure 4:</b> Diversification context.....	33
<b>Figure 5:</b> Chronological development of the Oureanafin group .....	37
<b>Figure 6:</b> Concept of industry: scenarios A and B .....	39
<b>Figure 7:</b> Strategic evolution of the Oureanafin Group.....	41
<b>Figure 8:</b> Porter’s five forces analysis for the WWTP sector.....	49
<b>Figure 9:</b> Value chain for WWTP construction.....	50

## TABLE OF TABLES

<b>Table 1:</b> Investments planned for the 2008-17 period concerning WWTP construction.....	16
<b>Table 2:</b> Casur’s total assets for sell, 2011 .....	17
<b>Table 3:</b> Total debt of Casur in 2011 .....	17
<b>Table 4:</b> Amount of Tresa’s real estate income to be distributed .....	19
<b>Table 5:</b> Credit expected to be paid in the liquidation scenario.....	20
<b>Table 6:</b> Credit expected to be paid in the insolvency plan scenario.....	20
<b>Table 7:</b> Sphere of activity of the companies in the group .....	38
<b>Table 8:</b> Suggestions taking into account the Opportunities, Strengths and Weaknesses for Aquino .....	42
<b>Table 9:</b> Suggestions taking into account the Threats, Strengths and Weaknesses for Aquino .....	43
<b>Table 10:</b> Impacts of the trends in the firm’s activity.....	45
<b>Table 11:</b> Calculation of unsatisfied amount in the liquidation scenario.....	52
<b>Table 12:</b> Calculation of unsatisfied amount in the insolvency plan scenario.....	52
<b>Table 13:</b> Calculation of Net Cash Flow for the liquidation scenario .....	53
<b>Table 14:</b> Calculation of Net Cash Flow for the insolvency plan scenario (in Euros) .....	54
<b>Table 15:</b> Comparison between the NPV of both options .....	54

# TABLE OF EQUATIONS

**Equation 1:** NPV formula ..... 34  
**Equation 2:** NPV calculation for the liquidation scenario ..... 53  
**Equation 3:** NPV calculation for the insolvency plan scenario ..... 54

# CASE STUDY

## PREAMBLE

Mr. Aquino was out of his mind and called the financial director of the company: *“It’s the second time this kind of situation happens to this company in one year! Another creditor suing us in court for lack of payment? We need to talk immediately ‘cause I really think we cannot solve this problem again...”*.

## THE FOUNDATION

Back in the seventies, Mr. Vítor Aquino and Mr. António Vieira Rodrigues decided to start a company named “Sociedade de Construções Aquino & Rodrigues, Lda.” in which each of them owned fifty percent of the shares. It was founded in 1977 in Ourém with the aim of being a benchmark in the field of public works, particularly in water and wastewater infrastructures.

Along with the growth of the company, investments in new companies have been made: several new companies were founded, more shares were bought<sup>1</sup>.

The year of 1988 was one of the best phases for the Aquino Family:

- **Casur Construções, S.A.**, henceforth referred to as Casur, emerged with the equity split equally between the Aquino Family and the Rodrigues Family and with the aim of entering in the real estate market.
- **Tresa – Construções do Algarve, S.A.**, hereinafter referred to as Tresa, was built with the exclusive purpose of making the Quinta da Cerca allotment in Castro Marim, build the houses and sell them.

Twelve years later, the parent company, Aquino & Rodrigues, co-founded with a thirty-four percent equity a company called **Urbaloura**, to build and promote residential and non-residential buildings in 74 acres of land property in Vila Nova da Barquinha. The plan was to build and sell up to 900 houses.

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<sup>1</sup>*Appendix I: Structure of the company before bankruptcy.*



In 2001, the group acquired a 40% equity of **Ourividro** which didn't give them the right to manage the company. The mission of this company, which has dedicated more than 30 years to the processing, assembly and marketing of flat glass, is to offer high quality products and develop new solutions to meet the needs of its customers, ensuring a rigorous selection of raw materials and the permanent search for excellence in their field of work.

Moreover, along several years some major companies and business associations continued to invite the Aquino family and its companies to participate in their equity<sup>2</sup>.

In 2005, the Aquino family decides to acquire the fifty percent share owned by António Vieira Rodrigues. It is precisely in late 2005 that the company suffered a major setback when Abílio Aquino (company's CEO and son of the founder who had worked in the firm since he was eighteen years old) died in a tragic road accident. Entrepreneur and dynamic, Abílio Aquino believed that the key for success was no secret but hard work and dedication.

In the same year, four more companies were added to the structure of the group:

1. **Vedap:** acquisition of equity with the aim of carrying out landscaping and fencing works undertaken by the group;
2. **Knowtec:** founded with the purpose of maintenance of the company's machinery and vehicles, as well as being in charge of the technical inspections that became obligatory by Portuguese legislation. In 2010, Aquino was its major customer with about eighty percent of its overall turnover;
3. **R.V.I.:** this firm was meant to recycle building materials. It was founded because the company owned a plot of land that could be licensed as a landfill for deposition of construction demolition waste;
4. **Ambiresíduos:** was founded with the purpose of collecting, transporting and disposing of industrial and urban waste, supporting the other companies within the group and also carry out new works in this field.

Three years later and with a share capital of 7,5 million Euros, the company becomes **Aquino Construções, S.A.** (the present designation), hereinafter referred to as Aquino, maintaining the same organizational structure as before.

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<sup>2</sup>*Appendix I: Structure of the company before bankruptcy.*

## **RECESSION IN PORTUGAL**

### ***The housing bubble, the subprime crisis and its consequences to the Portuguese economy***

The housing bubble burst in February 2007: the house prices have plummeted and the American banks - who granted credit for several years without requesting personal guarantees or checking the history of the client - were forced to assume losses. In October 2008 several financial institutions in the USA and, consequently, in Europe went bankrupt.

Hence, the Portuguese economy started to reflect the effects of the international financial crisis, evidenced by the huge declining of the real GDP variable in 2009<sup>3</sup> in spite of the growth verified in each of the four years before. The Portuguese banks were already vulnerable and with the international financial changes, they were no longer able to finance themselves overseas. In the biennium 2008/9, two Portuguese banks went bankrupt due to bad investments and accounting fraud.

Portugal was forced to sign the "Memorandum of Understanding" concluded in May 2011 between the Portuguese Government and the International Monetary Fund, the European Commission and the European Central Bank in order to balance the public accounts, implement reforms in the public sector of the Portuguese economy and help the banks finance themselves at reasonable interest rates with the counterpart of receiving financial assistance of 78 billion Euros over three years. This agreement forced the Government to define budgetary policies in which, among other things, public expenditure was reduced, directly affecting companies involved in public works to date.

### ***The recession in the construction industry in Portugal***

The construction industry - an industry that serves as a barometer of the national economy - was strongly affected by the recession and has seen its situation deteriorate.

In addition to this, in Portugal, the unsustainable growth of the construction industry had began long before the crisis, induced by the society's idea that home ownership was a way to build personal wealth as well as the first step to start a family.

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<sup>3</sup>Appendix II: Main economic indicators in Portugal from 2005 to 2011.

The production in the construction industry in Portugal has been excessive: between 1991 and 2011 more than 80 thousand households per year have been built (which corresponds to building a city larger than Coimbra per year for 20 years)<sup>4</sup>. According to the 2011 Census<sup>5</sup>, the increase of households in relation to 2001 Census was 16.3 per cent while the number of families increased by 11.6 per cent and the population only by 1.9 per cent.

With regard to infrastructures, there have also been over-investments: the number of motorways in Portugal is above the European Union average (miles per thousand inhabitants (17 versus 13)). In addition, in 9 of the 25 motorways the number of users does not justify the investment<sup>6</sup>.

The evolution of the industry can be demonstrated by comparing the variation in Gross Value Added (GVA). While total GVA presented a relatively small growth in the period of 2000-2011, the GVA in this industry suffered an expressive decrease of around 36% (from around 12 million Euros in 2000 to 5,5 million in 2011)<sup>7</sup>.

With regard to public works, a specific area of the construction industry, there were also significant drops in turnover, mainly from 2010 onwards. In 2013, the number of contracts reported by promoters of public works to the Base Portal decreased by approximately 26.5 per cent<sup>8</sup>.

In five years (2009-13) 4.410 cases of construction companies undergoing bankruptcy proceedings have been reported to the National Institute of Construction and Real Estate (INCI). Fortunately, from 2012 to 2013 the annual number of bankruptcies decreased significantly (36%): from 1376 to 877<sup>9</sup>.

## **THE SNOWBALL IN THE OUREANAFIN GROUP**

### **2005**

The financial context was favourable and Mr. Aquino saw it was the right time to invest in the acquisition of António Rodrigues' shares. To finance this investment there was the need to create

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<sup>4</sup>Cóias, Vítor. "Construção: os excessos e o futuro".

<sup>5</sup>Censos 2011.

<sup>6</sup>Ibid.

<sup>7</sup>"Relatório do Sector da Construção em Portugal - 2013", 10.

<sup>8</sup>Ibid, 18.

<sup>9</sup>Ibid, 33.

Oureanafin - Investimentos financeiros SGPS, S.A. This enterprise became owner of the shares of Aquino Rodrigues S.A. and all its subsidiaries<sup>10</sup>.

Real estate was booming and investing in the promotion of multi-purpose construction and urban allotments seemed a good strategy to adopt, thus reinforcing Casur and Tresa as real estate companies in the areas of Ourém and Algarve, respectively. The group's operational strategy was a peculiar one: the companies in question owned land plots, or bought them, and would then design the allotment's infrastructure to ensure that adequate services, facilities and structural elements were provided. Then Aquino would build the infrastructures according to the designs, as a subcontractor. In addition, Aquino as the main shareholder of the two companies would also purchase and provide most of the raw materials and goods needed by both real estate companies.

### ***2007/8***

More investments were made, mostly in the form of acquisition of land property as inputs for existing enterprises, which contributed to greater indebtedness with no prospects of return on the short term.

### ***2010***

The year 2010 was marked by the effects of world financial crisis: the company's financial burden increased, market prices started to fall abruptly (leading to reduced profit margins for enterprises and reduced demand in the real estate sector) and public investment dropped sharply.

Increased difficulty in selling newly-built allotments led the real estate companies of the Oureanafin group to lose their ability to pay their debts (loans, subcontracts and goods) to their main creditors: Aquino and the banks.

Furthermore, the banks started to demand a reduction in the factoring limits, a process often used by the company to obtain liquidity while waiting to be paid (normally 60 days or more). This prevented them from paying to their own suppliers and employees on time.

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<sup>10</sup>*Appendix III: Structure of the company in 2011.*

## **2011**

The situation became so critical that in February 2011 it was impossible for the company to comply with their payment obligations and on March 22 an urgent meeting with the main five banks was called in order to increase cash reserves.

The company's financial situation gets worse and cash-flow fails to meet the demands from suppliers, banks and human resources. It became unsustainable, several engineers and foremen terminated their contracts on just and proper grounds, works were delayed, goods and human resources were scarce and the financial aid of 1 million Euros promised by the banks in the meeting was long overdue.

On top of everything, on 14 July a new bankruptcy petition had been presented in court by another subcontractor and on 18 July banks decided not to release the promised funds. Filing for bankruptcy was inevitable.

On 27 July 2011 the company was forced to admit that it had to file for bankruptcy and was no longer able to make loans to Tresa and Casur as it used to, thus hampering the development of both company's works.

## **OUREANAFIN GROUP – The Major Three**

### ***AQUINO CONSTRUÇÕES, S.A.***

From a rented office to 33 thousand square meter of office site in Ourém, the company has, over the course of 38 years, evolved into a business of excellence leaving its imprint all over the country. The Municipal market of Ourém, the soccer field in Portimão, the Carregueiro bridge, the bypass road Paúl/Fonte Grada in the municipality of Torres Vedras, the Retail Park in Barreiro, are some of the examples of these imprints<sup>11</sup>.

In order to achieve the company's sustainability in the years after bankruptcy, an analysis of the works in progress on its portfolio was needed. It turned out that the company had several contracts, amounting to over 21 million Euros, that could be starting by the end of 2011 and early 2012<sup>12</sup>. In addition, there were two contracts that would almost certainly be awarded: one in the municipality

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<sup>11</sup>*Appendix IV: Some of the most relevant constructions of Aquino Construções, S.A.*

<sup>12</sup>“Aquino Construções, S.A. – Plano de Negócios Alterado”, 6.

of Golegã to the amount of 2,5 million Euros and another in the municipality of Pombal to the amount of 990 thousand Euros<sup>13</sup>.

With regard to human resources, during the first months of 2011 the company employed about 230 employees. However, due to financial constraints, some employees had to be dismissed and others terminated their contracts fearing bankruptcy. At the time of analysis, the company employed 110 employees<sup>14</sup>.

### ***TRESA – CONSTRUÇÕES DO ALGARVE, S.A.***

Founded in 1988, owner of several plots, houses and buildings for sale in Quinta da Cerca in the centre of Castro Marim at the time, Tresa was often involved in public works as a subcontractor to Aquino in the Algarve and southern Alentejo regions.

In late 2011, the company sold all the vehicles and machinery (for lack of conditions to carry out regular maintenance and to pay insurance and vehicle taxes) and all manpower was laid off or transferred to Aquino.

### ***CASUR CONSTRUÇÕES, S.A.***

With less than 10 employees, this company was engaged in the development of residential multi-storey buildings (design, construction and commercial promotion) and in the promotion of its projects throughout the second half of the 2000/10 decade, mainly financed by national banks. Besides, Aquino, its main shareholder, also financed some of the projects.

When Aquino began to experience lack of liquidity, which led to its bankruptcy, it started to claim Casur's debt which at the time was almost 2,5 million Euros<sup>15</sup>. By then, Casur had its own difficulties: it was not able to sell the apartments already built and the bank debts were getting too high. Therefore, the company was forced to accept a major debt restructuring plan, to avoid reaching the stage of bankruptcy.

When drawing up the restructuring plan, it was understood that the company's financial difficulties were only due to its lack of liquidity since it had over 6 million Euros in mortgaged-free goods (land property, plots, buildings, apartments and garages)<sup>16</sup>. In 2011, the total debt was about 7

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<sup>13</sup>Ibid.

<sup>14</sup>“Plano de insolvência de Aquino Construções, S.A.”, 14.

<sup>15</sup>Table 3: Total debt of Casur in 2011.

<sup>16</sup>Table 2: Casur's total assets for sell, 2011.

million Euros, including the debt to Aquino and Oureanafin, the debt to banks (granted by real estate), and the debt to suppliers of goods and services<sup>17</sup>.

## **THE ULTIMATE MEETING OF THE BOARD**

In December 2011, all the members of the Board gathered in a meeting to decide the future of each of the three major companies.

Each member collected sufficient information required for a conclusive discussion during the meeting: one studied the market conditions, its evolution in the recent past and the construction statistics, and the others knew the activity of each company (Aquino, Casur and Tresa) in depth.

The first logo appears on the screen: **Aquino Construções, S.A.**

The first speaker starts by saying, "Given our difficulty in competing with the prices offered by our competitors in the public works sector, we must find a way to specialize ourselves. Why don't we take advantage of the know-how that our teams have been creating since 2000 in directional drilling in basic sanitation works?"

This was regarded as a good alternative to traditional methods of installing cables and pipelines in the subsoil without having to excavate and demolish roads, highways or historic centers.

In the middle of the discussion, another member of the team reminded that the last three years of the company relied on the partnership with electromechanical companies for the construction of Wastewater Treatment Plants (WWTP) and showed the following table stated by the Portuguese Federation of the Construction Industry and Public Works (FEPICOP) in the document on the major construction investments planned for the 2008-2017 period.

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<sup>17</sup>Table 3: Total debt of Casur in 2011.

**Table 1:** Investments planned for the 2008-17 period concerning WWTP construction

Project	Planned investment
WWTP in Carregado, Alenquer and others	17 million €
Treatment facilities and drainage systems	100 million €
Lisbon drainage plan	140 million €
Wastewater sanitation	2.662 million €
Recycling of urban organic waste	270 million €
<b>Subtotal</b>	<b>3.189 million €</b>
<b>Basic infrastructure totals</b>	<b>42.899 million €</b>

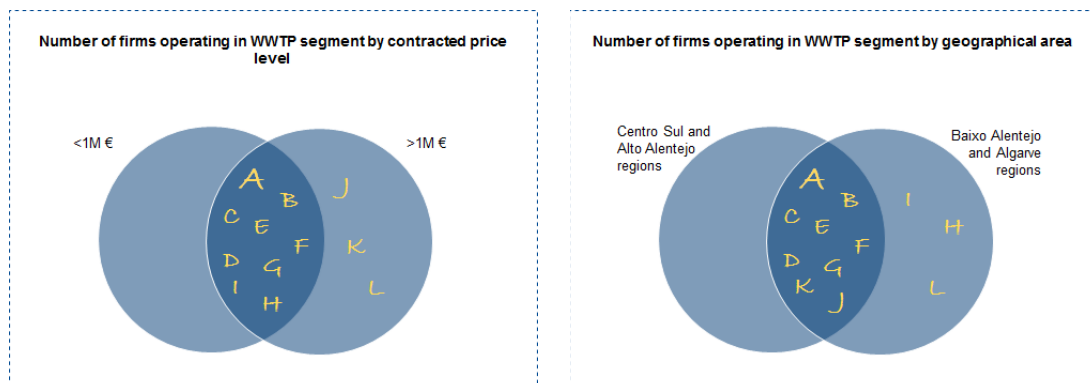
Source: Adapted from “Grandes investimentos em construção, 2008-2017”, 5

Most of the people present in the meeting agreed it would be a good option to take advantage of the investment already done in machinery and employee training – taking into account that the complexity of the solutions required to the development of activities in WWTP construction involves enormous investments.

In addition, she recalls that the average customer service rate for wastewater sanitation is about 78%<sup>18</sup> which is significantly lower than the rate stipulated in the national plan for water and sanitation (PEAASAR)<sup>19</sup> (90%).

She also showed the following market analyses carried out considering the WWTP segment, announcing at the same time that the companies from A to L have different market shares.

**Figure 1:** Number of firms operating in WWTP segment by contracted price level and geographical area



Source: Author’s analysis<sup>20</sup>

<sup>18</sup>“RASARP”, Volume 1, 27.

<sup>19</sup>“PEAASAR”, 87.

<sup>20</sup>Based in “Competidores na construção de ETAR”.



The only identified problem of this option has to do with the access to building raw-materials and goods as they are limited to the suppliers operating nearest to the construction sites and in the South of the country there are only a few. Although they have many regular suppliers, sometimes it is necessary to look for better prices to meet the work specifications.

"I would like to make it clear that also **Casur** will have to re-invent its business." – another participant stands up and shows the following tables:

**Table 2:** Casur's total assets for sell, 2011

<b>Situation of real estate</b>	<b>Book value</b>
Mortgaged property	2.950.682,5 €
Completed works or property for sale	4.074.304,89 €
Work in progress	2.203.389,93 €
<b>Total assets for sell</b>	<b>6.277.694,82 €</b>

Source: Adapted from "Informação financeira, Casur, 2011"

**Table 3:** Total debt of Casur in 2011

<b>Entity</b>	<b>Outstanding value</b>
Aquino Construções, S.A.	2.350.000,00 €
Oureanafin - Investimentos financeiros SGPS, S.A.	202.725,08 €
Suppliers	156.104,22 €
Banks (Long Term Debt)	2.700.782,50 €
Banks (Short Term Debt)	1.670.427,90 €
<b>Total debt</b>	<b>7.080.039,70 €</b>

Source: Adapted from "Informação financeira, Casur, 2011"

"At this point, selling all our property would not be sufficient to pay all our outstanding debts, supposing that we would sell them in the short-term, which seems impossible to me", he argues. "What I consider a feasible option is to use the money from the sales of property to finance new activities that may generate more profit than selling property and land plots. Real estate companies are losing money with sales today".

"Why don't we try to fill the gap left by the companies that worked for us as subcontractors, and filed for bankruptcy?" asks one of the participants.

Everyone was paying attention.

He carries on showing the following image:

**Figure 2:** Secondary clarifier



Source: "E.D.A.R., Primera fase"

The construction of a WWTP comprises 5 main stages.

1. The first stage includes preparing the ground for the placement of the organs of a WWTP, i.e. everything that involves landscaping, soil excavation and construction of landfills to start building the tanks and other elements of the WWTP.
2. In a second stage, the main focus is the construction of the entire structure of the WWTP including large tanks, engine room, inlet pipelines and everything that can be characterized as building construction works. Taking the example of a secondary clarifier of the wastewater, represented in the Figure 2, the circular part, which is the one made of reinforced concrete, is the one built in this phase.
3. Then all the devices used to treat the wastewater are installed, i.e. the wastewater treatment equipment like filters, bioreactors and pumps. Using the same example, this stage would include the installation of the equipment that allows to filter the water, that is, the rotating bridge that is presented in the image and all instruments associated to it.
4. Finally, it is necessary to build all the electrical installation so that the wastewater treatment equipment operates smoothly. This stage comprehends the implementation of all the electrical

connections to make all the machinery work, including electrical switchboards and transformer points.

5. A last stage that could be called the experimental stage is "commissioning". It is the moment or period (10 days for instance) in which the company tests the WWTP to check if everything is operating properly.

"At this point Aquino only takes part in the first two stages and subcontracts the implementation of phases 3, 4 and 5 to companies specializing in wastewater treatment equipment and electrical works. However, the companies that do the mechanical works with us are all going bankrupt! Why don't we contract mechanical engineers to do their tasks and implement phases 3 and 5 ourselves?". The idea was in the air.

Another member of the team spoke up: "in what concerns **Tresa**, I only see two options: immediate winding up or devise an insolvency plan that allows the completion of the Quinta da Cerca project. In the insolvency plan we will only have to demonstrate that there still exists demand for touristic houses, especially from Spanish buyers (accustomed to more expensive and poorer quality houses in Spain touristic areas), that quality of life of current local inhabitants is sufficiently high to afford our houses and that we are able to build cheaper quality houses (with the knowhow that we have acquired over the past few years). Take a look at the analyses I carried out during the past week":

#### 1. Liquidation scenario

**Table 4:** Amount of Tresa's real estate income to be distributed

Description	Value
Movable property	0,00 €
Movable property with leasing	0,00 €
Real estate allocated to employees	0,00 €
Other real estate	4.065.069,93 €
<b>Total sales</b>	<b>4.065.069,93 €</b>
Total sales realized at auction	2.845.548,95 €
Amount to be deducted from property for payments to employees	35.482,79 €
<b>Amount of real estate income to be distributed</b>	<b>2.810.066,16 €</b>

Source: Adapted from "Plano de insolvência, Tresa – Construções do Algarve, S.A", 16

**Table 5:** Credit expected to be paid in the liquidation scenario

<b>Description</b>	<b>Total credit</b>	<b>Amount payable</b>	<b>%</b>
Credit to employees	35.482,79 €	35.482,79 €	100
Public treasury	47.356,91 €	47.356,91 €	100
Social security	17.705,13 €	17.705,13 €	100
Guaranteed	3.439.661,33 €	2.745.003,76 €	80
Conditional credit	128.690,11 €	0,00 €	0
Other creditors	6.800.736,34 €	0,00 €	0
<b>Total</b>	<b>10.469.632,61 €</b>	<b>2.845.548,59 €</b>	<b>27</b>

Source: Adapted from “Plano de insolvência, Tresa – Construções do Algarve, S.A”, 16

## 2. Insolvency plan scenario

**Table 6:** Credit expected to be paid in the insolvency plan scenario

<b>Description</b>	<b>Total credit</b>	<b>Amount payable</b>	<b>%</b>
Credit to employees	35.482,79 €	35.482,79 €	100
Public treasury	47.356,91 €	47.356,91 €	100
Social security	17.705,13 €	17.705,13 €	100
Guaranteed	3.439.661,33 €	3.439.661,33 €	100
Conditional credit	128.690,11 €	0,00 €	0
Other creditors	6.800.736,34 €	3.400.368,17 €	50
<b>Total</b>	<b>10.469.632,61 €</b>	<b>6.940.574,33 €</b>	<b>66</b>

Source: Adapted from “Plano de insolvência, Tresa – Construções do Algarve, S.A”, 16

## OVERVIEW

To analyze this case consider these key questions:

1. How would you describe Oureanafin's strategy over the years?
2. Characterize the option the Board is considering for Aquino, taking into account that the insolvency plan is already approved and the company has the necessary financial support.
3. Concerning the option the Board is considering for Casur, how would you characterize it in terms of strategic diversification and competitive advantage?
4. Regarding Tresa, which option do you consider to be the best: to liquidate the company or to restructure the business and implement an insolvency plan? Consider these assumptions:
  - a. It is estimated that in the total liquidation option 10% of the guarantees will be enforced whereas in the insolvency plan option none of the guarantees will be enforced;
  - b. Weighted Average Cost of Capital (WACC) = 12%;
  - c. Forced sale in liquidation auction occurs within two years;
  - d. The investment required to maintain activity is 400 thousand Euros<sup>21</sup>;
  - e. The insolvency plan presupposes that<sup>22</sup>:
    - Inflows of 300 thousand Euros in the first year, 200 thousand Euros in the second and 1 million Euros per year in the following 8 years;
    - Outflows of 10% of the total amount payable, estimated by the participant in the meeting, distributed equally between the first two years and the rest distributed equally over the following eight years.

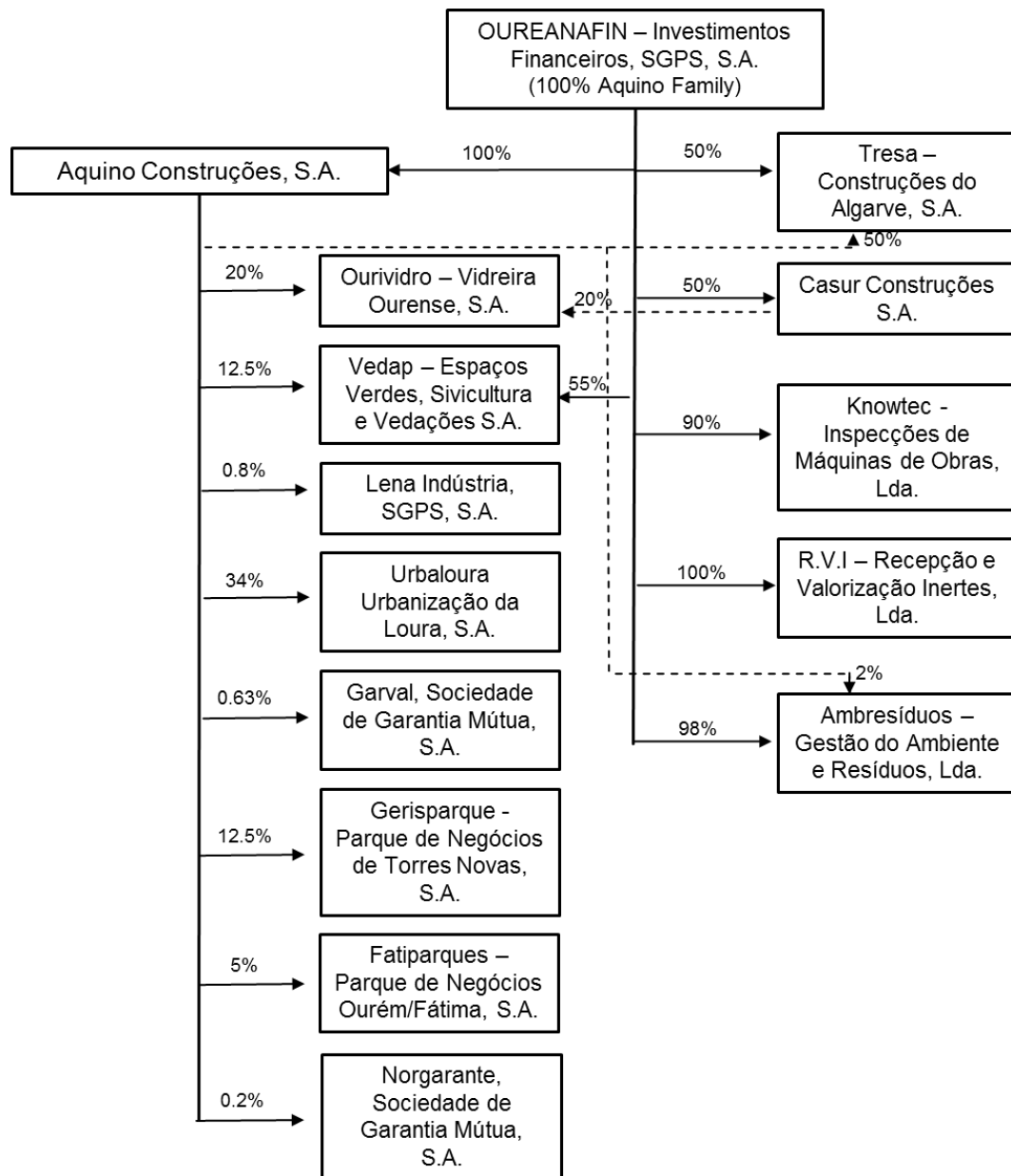
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<sup>21</sup>This value is an estimated amount by the author.

<sup>22</sup>These are illustrative assumptions.

## APPENDICES

### APPENDIX I: Structure of the company before bankruptcy



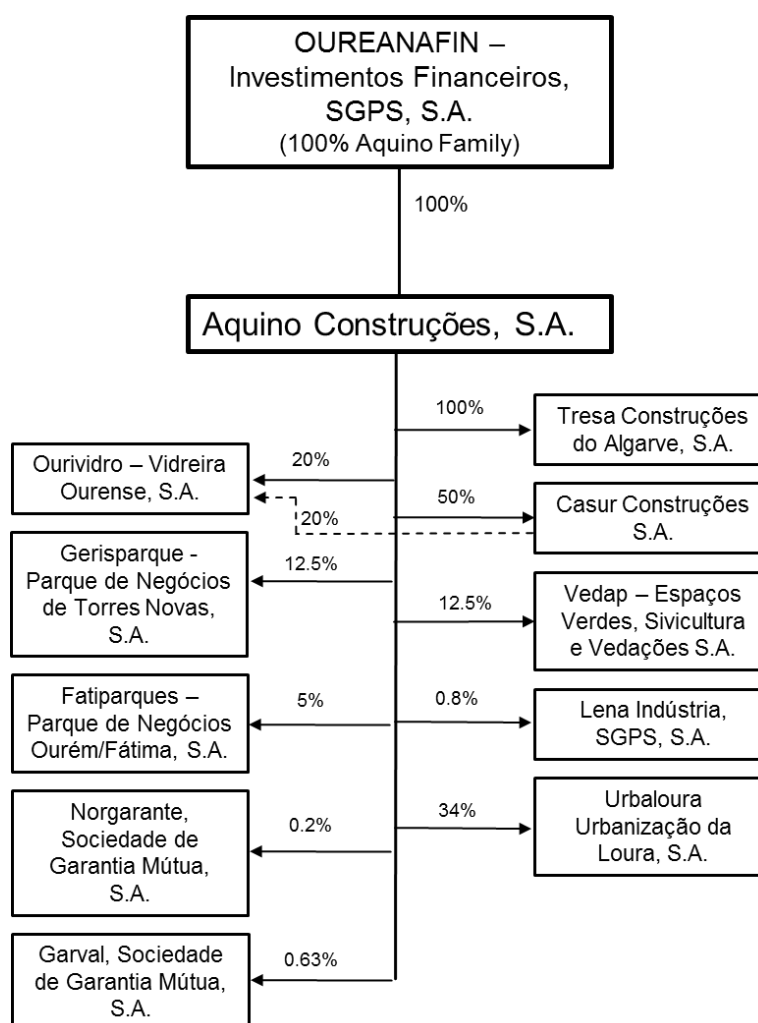
Source: “Plano de insolvência de Aquino Construções, S.A.”, 9

*APPENDIX II: Main economic indicators in Portugal from 2005 to 2011*

	2005	2006	2007	2008	2009	2010	2011
<b>Real GDP</b>							
<b>Real GDP growth rate (%)</b>	0,77	1,55	2,49	0,2	-2,98	1,9	-1,83
<b>Unemployment rate (%)</b>	7,6	7,7	8,0	7,6	9,4	10,8	12,7
<b>Inflation rate (CPI) (%)</b>	2,3	3,1	2,5	2,9	-0,83	1,4	3,65

Source: INE, Eurostat and Pordata

*APPENDIX III: Structure of the company in 2011*










Source: Information given by the company

*APPENDIX IV: Some of the most relevant constructions of Aquino Construções, S.A.*

Description	Illustration
Municipal Market of Ourém – Municipality of Ourém	
Landscaping of indoor swimming-pool at Santo António das Areias - Municipality of Marvão	
Design / Construction of Linear Park – Municipality of Ourém	
Synthetic Grassing of Soccer Field at Mexiolheira Grande – Municipality of Portimão	
Landscaping works on the South Bank of the River Almonda – Municipality of Torres Novas	
EN 118 - Foz Bridge at km 116+780 - Replacement of Engineered Structures – Estradas de Portugal, SA	



Description	Illustration
Outer Connection Road (North) to Castro Marim – Municipality of Castro Marim	
Construction of bridge over the brooks Ribeira de Oeiras and S. João dos Caldeireiros – Municipality of Mértola	
Construction of the Outer Connection Road Paúl / Fonte Grada – Municipality of Torres Vedras	
New Bridge of Carregueiro on the EN 2 - Estradas de Portugal, SA	
Construction of Repsol Petrol Station - Rinchoa - Rio de Mouro	
Intermarché Hypermarket – Fipoconstroi, Lda	
Synthetic grassing of soccer field in Sabugo – União Desportiva e Recreativa Sabuguense	

Design/Construction of Day Care Centre and Nursery in Atalaia – Centro Social Paroquial de Atalaia, IPSS



Source: Adapted from “Plano de Insolvência de Aquino Construções, S.A.”

# LITERATURE REVIEW

The profits of a construction firm are not determined by the firm itself<sup>23</sup>. They are determined by competition with the firm's competitors (Kim and Reinschmidt, 2011) as to conquest a job, contractors compete with their peers – and the lower the bid, the lower the contractor's profitability. This is why it is crucial to make a deep analysis of the environment in which a firm operates and be aware of the firm's potential in order to explore the opportunities and competitive advantage. In addition, it is also necessary to define corporate strategies: diversification, integration and internationalization.

## ENVIRONMENTAL ANALYSIS

### *Macro-analysis*

#### PEST / PESTEL Analysis

PESTEL stands for Political, Economic, Socio-cultural, Technological, Environmental and Legal and it is a mnemonic to define a framework used by companies to track the environment they're operating in or are planning to launch a new project/product/service etc.

This tool helps us to bear in mind that there are issues outside our organization which can have some level of impact on it. Therefore, this tool should be used to identify the impacts of trends on the industry under discussion in the short and long term, i.e. for example, not only recognise the economic growth trend, but also the positive impact it will have on consumers income and consequently a higher proneness to buy construction industry related products<sup>24</sup>.

Moreover, so that the framework can be more useful and well thought out we should rate the importance of the issues we are identifying to the organisation as follows: critical, extensive, important, significant, moderate or insignificant. And also rate the likelihood of it occurring (eg. certain, extremely likely, likely, potential, remote possibility or will not transpire)<sup>25</sup>.

It should be noted that sometimes, for the sake of simplicity and non-application of the last two variables, only the PEST analysis is used.

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<sup>23</sup>Journal of Management in Engineering, ASCE, April 2011.

<sup>24</sup>Cardeal, Nuno. "Pensamento Estratégico", 102.

<sup>25</sup>"Pestle Analysis, Strategy Skills", 10.

### **Political or Legal environment**

This context should cover all the trends at the level of the forces that allocate power, constrain and regulate<sup>26</sup>.

The following are examples of prompts to be included in our brainstorming: government taxes, policies or stability; freedom of press; rule of law; levels of bureaucracy; regulation and de-regulation trends; social and employment legislation.

### **Economic environment**

This context should comprise the trends at the level of the forces regulating the exchange of goods, money, energy and information<sup>27</sup>. Factors such as stage of business cycle; economic growth patterns, inflation trends and interest rates; unemployment level; labour costs and income distribution should be taken into account.

### **Sociocultural environment**

This point should focus on the analysis of the mentality of the individuals or consumers in a given market: their values and traditions as well as social indicators such as exchange rates, age distribution, population growth rate, wealth distribution, education and career trends, religious beliefs.

### **Technological environment**

Brainstorming about the progress of this issue, i.e. keeping pace with technological innovations that may affect the organisation and the market favourably or unfavourably has become a crucial management tool in the last decades. This refers particularly to automation, research and development and inherent cost savings.

### **Environmental issues**

Impact on the environment is a rising concern. Increasingly, consumers and regulators penalise businesses and industries for having adverse effect on the environment. Therefore, the analysis

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<sup>26</sup>Cardeal, Nuno. “Pensamento Estratégico”, 103.

<sup>27</sup>Ibid, 102.

should consider issues such as waste disposal rules, environmental protection laws, energy consumption regulation and popular attitudes towards the environment.

### *Micro-analysis*

#### Porter's Five Forces

Michael Porter (1980) developed this framework with the aim of evaluating the state of competition in an industry. For him, these forces determine the ultimate profit potential in the industry and, consequently, its attractiveness:

1. The bargaining power of buyers:

This analysis should assess the easiness how buyers can drive the prices of a product or service down or demand better quality or greater quantity. The drives that may be evaluated are the number of buyers, the existence of switching costs, if the buyer has full information, etc.

2. The bargaining power of suppliers:

In this point, one should consider the power that a supplier has in an industry by threatening to raise prices or reduce the quality of purchased goods and services. Here it is important to bear in mind if the supplier deals with few competitors, the uniqueness of the product or service, the existence of switching costs, and so on.

3. The threat of substitution:

The existence of substitute products or services to the firm in question must be analyzed taking into account that if substitution exists and/or is easily achievable, this weakens the firm's power. Consumers' loyalty and their consumption trends/habits and the price and performance of existing substitutes should be taken into account.

4. The threat of new entry:

The ability of companies to enter in the market in which the company operates should also be assessed. The easier it is to enter in the market, the weaker the firm's positioning. Therefore, all barriers to entry (6 according to Porter: economies of scale, product differentiation, capital requirements, switching costs, access to distribution channels and cost advantages) should be considered.

## 5. Competitive rivalry:

Porter argues that "rivalry occurs because one or more competitors either feels the pressure or sees the opportunity to improve position"<sup>28</sup>. Cardeal defends that this force is influenced by the power of the other four forces: the worse the influence the other forces have on the industry attractiveness, the higher the rivalry among participants tend to be<sup>29</sup>.

Therefore, we have to take into account the number of competitors (directly related to the level of exit barriers), the growth of the market they are inserted in, if there are high fixed or storage costs, the existence of switching costs and the differentiation of the product or service.

### *Micro and Macro analysis*

#### SWOT Analysis

Knowing the environment in which the firm operates, i.e. market opportunities and major challenges, is crucial to define a strategic plan. Created in the sixties, the SWOT analysis (standing for Strengths, Weaknesses, Opportunities and Threats) aimed to meet this need. This analysis is basically a list of items that allows the identification of the forms of exploring the opportunities, mitigating the effect of threats, taking advantage of strengths and minimizing the impact of weaknesses (Cardeal, 2014).

Moreover, there should be a co-relation between the factors identified in the internal analysis (i.e. strengths and weaknesses) and the ones pointed out in the external analysis (opportunities and threats). Cardeal also sustains that, for each opportunity (or threat) identified, a suggestion should be made to enhance the strengths and overcome the weaknesses identified.

## **COMPETITIVE ADVANTAGE**

“The essence of formulating competitive strategy is relating a company to its environment.”

Michael Porter

It is common knowledge that a firm has competitive advantage when its return is higher than that of the average competitor in the industry in which it operates<sup>30</sup>. Barney (2012) goes further by

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<sup>28</sup>Porter, Michael. “Competitive Strategy”, Chapter 1.

<sup>29</sup>Cardeal, Nuno. “Pensamento Estratégico”, 124.

<sup>30</sup>Ibid, 132.

stating “a firm experiences competitive advantages when its actions in an industry or market create economic value and when few competing firms are engaging in similar actions”<sup>31</sup>.

In order to explain his point of view, Michael Porter (1980), sets out the concept of the value chain. For him, “every firm is a collection of activities that are performed to design, produce, market, deliver and support its product” which can be divided in: primary activities (inbound logistics, operations, outbound logistics, marketing and sales, and service) and support activities (firm infrastructure, human resource management, technology development, and procurement). In his book<sup>32</sup>, Porter demonstrates that a firm may develop a competitive advantage in any one of these areas using three generic strategies:

- cost advantage strategy;
- differentiation strategy;
- focus strategy.

Although he at first stated that strategies can be used singly or in combination, he considers that the effective implementation of any of these strategies usually requires total commitment and supporting organizational arrangements that are diluted if there is more than one primary target. Considering also that the option of attempting to follow more than one strategy leads the firm to a situation of strategic inconsistency what he calls “Stuck in the middle”<sup>33</sup>.

#### Cost advantage:

Stands for the achievement of overall cost leadership in an industry through a set of functional policies aimed at this basic objective. This type of leadership requires the creation of economies of scale and a great deal of managerial attention to cost control (cost minimization in areas like R&D, service, sales force, advertising, among others).

#### Differentiation:

This strategy consists on the creation of a product or service that is perceived as being unique in the industry in which the firm operates. For Porter, approaches to differentiating can take many

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<sup>31</sup>Barney, Jay B. “Gaining and Sustaining Competitive Advantage”.

<sup>32</sup>Porter, Michael. “Competitive Strategy”, Chapter 2.

<sup>33</sup>Cardeal, Nuno. “Pensamento Estratégico”, 175.

forms: design or brand image, technology features, customer service, dealer network or other dimensions. Ideally, the firm differentiates in several domains.

### Focus

The strategy rests on the premise that the firm is thus able to serve its narrow strategic target more effectively or efficiently than competitors who are competing more broadly. So, the firm focus on a particular buyer group, segment of the product line or geographic market.

**Figure 3:** Differentiation options

		Competitive advantage	
		Lower cost	Differentiation
Competitive Scope	Broad target	Cost advantage	Differentiation
	Narrow target	Focus (niche)	

Source: Adapted from Porter, Michael. “Competitive Strategy”, 39

Differently from other types of business which can create the demand for their new product or service, construction demands are not generated by construction firms<sup>34</sup>. “Ninety-nine percent of the work is derived from demand in the construction industry, and contractors have to pursue jobs available in the market” (Hillebrandt and Cannon 1989)<sup>35</sup>. Therefore, it is expected that the approach to outperforming other firms in an industry will be by specializing in a market niche or reducing costs.

## **DIVERSIFICATION**

For Hillebrandt and Cannon (1989)<sup>36</sup> diversification is considered a major strategy for contractors’ growth. In contrast, Tasi (1994)<sup>37</sup> “developed two multiple regression models using the data of 100 construction firms and concluded that specialization would be favorable to maximize expected

<sup>34</sup>Journal of Management in Engineering, ASCE, April 2011.

<sup>35</sup>Referred in Journal of Management in Engineering, ASCE, April 2011.

<sup>36</sup>Ibid.

<sup>37</sup>Ibid.



return, whereas diversification would result in lower risk”. Junnonen (1998)<sup>38</sup> maintained that “contractors spread their risk by diversifying in more than one business sector, preferably contra cyclical”.

Put simply, diversification exists when a firm enters an industry different from the one in which it operates. However, the concept of “industry” is a very broad and subjective matter; the results of the analysis will depend on the justification for choosing a given industry.

Cardeal (2014) introduces a concept of semi-diversification that applies when the firm chooses to enter a new market segment and a new range of products, while still belonging to the industry in which it operates. He maintains that diversification is built on new products or services that fall within a different industry but are somewhat related with the base industry.

**Figure 4:** Diversification context

		Current industry		New industry
		Market segments served	New market segments	
Current industry	Current product ranges	Market penetration	Market extension	Diversification
	New product ranges	Product extension	Semi-diversification	

Source: Adapted from Cardeal, Nuno. “Pensamento Estratégico”, 255

## VERTICAL INTEGRATION

Sudarsanam (2010)<sup>39</sup> defines vertical integration as “the combination of successive activities in a vertical chain under common coordination and control of a single firm”. This is a corporate strategy because it requires cooperation from various business units within the firm (Cardeal, 2014).

Vertical integration may be non-existent (just a market transaction), quasi-integration (establishment of long-term contracts with specific partners upstream or downstream, with the

<sup>38</sup>Ibid.

<sup>39</sup>Sudarsanam, Sudi. “Creating Value from Mergers and Acquisitions”, 153.

possibility of the firm being part of the external partner capital), total integration (where the firm takes full responsibility and control over the activities of the acquired firm) and partial integration (where only part of the activity is integrated).

Besides, there are two forms of vertical integration: an upstream integration in which the acquired company produces some inputs used in the production of the output of the firm; a downstream integration that occurs when the acquired firm is responsible for activities related with distribution centers and retailers.

## NET PRESENT VALUE

A firm only takes on a project or an investment if they expect to have profits in the future. One way to estimate the profitability of an investment is to calculate NPV. Basically, this estimation compares the amount invested in moment 0 (today) to the present value of the future cash that is expected to be earned with the investment.

The formula to calculate NPV is as follows:

**Equation 1:** NPV formula

$$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

$C_t$  – Net cash inflow;

$C_0$  – Initial investment;

$r$  – Discount rate;

$t$  – Number of periods.

## **TEACHING NOTES**

This case serves as a means to combine business school theory with the real life case of the Oureanafin group.

This section is for the exclusive use of the professor and includes guidance for class discussion. It is important to refer that this analysis is a recommendation and not the only solution.

This case study was written in 2015. For that reason, possible data updating and other considerations may be introduced in the upcoming years.

## **SYNOPSIS**

This case study describes a real-life case of a group of companies named Oureanafin.

Founded as “Sociedade Construções Aquino & Rodrigues, Lda” (later renamed “Aquino Construções, S.A.”), the group established itself in the public works market. For over 30 years it acquired and founded various companies from a wide range of areas, including: construction and sale of residential and commercial buildings, glass manufacturing, landscaping and fencing, maintenance of construction machinery and vehicles, recycling of building materials and collection, transport and disposal of industrial and urban waste.

In 2010, the firm started to suffer the effects of the world financial crisis and its massive impact on the construction industry: the market prices of real estate and the amount of public investments dropped sharply. By then, the Group and its companies had already purchased land and shares financed by banks that believed in its business growth dynamics. Aquino had also lent money and provided raw-materials and goods to the other two major companies (Casur and Tresa, both engaged in the real estate market). When they failed to pay back Aquino and Aquino’s own profit margins of public works went down, the company ceased to have liquidity to fulfil its immediate financial obligations and to continue operating in normal conditions. Therefore, in 2011 Aquino Construções, S.A files for bankruptcy.

In December 2011, all the members of the board gathered in a meeting to decide the future of each of the three major companies (Aquino, Casur and Tresa) coming up with several different strategies which are addressed in the final questions of the case study.

## SUGGESTED QUESTIONS

1. How would you describe Oureanafin's strategy over the years?
2. Characterize the option the Board is considering for Aquino, taking into account that the insolvency plan is already approved and the company has the necessary financial support.
3. Concerning the option the Board is considering for Casur, how would you characterize in terms of strategic diversification and competitive advantage?
4. Regarding Tresa, which option do you consider to be the best: to liquidate the company or to restructure the business and implement an insolvency plan? Consider these assumptions:
  - a. It is estimated that in the total liquidation option 10% of the guarantees will be enforced whereas in the insolvency plan option none of the guarantees will be enforced;
  - b. Weighted Average Cost of Capital (WACC) = 12%;
  - c. Forced sale in liquidation auction occurs within two years;
  - d. The investment required to maintain activity is 400 thousand Euros<sup>40</sup>;
  - e. The insolvency plan presupposes that<sup>41</sup>:
    - Inflows of 300 thousand Euros in the first year, 200 thousand Euros in the second and 1 million Euros per year in the following 8 years;
    - Outflows of 10% of the total amount payable, estimated by the participant in the meeting, distributed equally between the first two years and the rest distributed equally over the following eight years.

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<sup>40</sup>This value is an estimated amount by the author.

<sup>41</sup>These are illustrative assumptions.

## OBJECTIVES

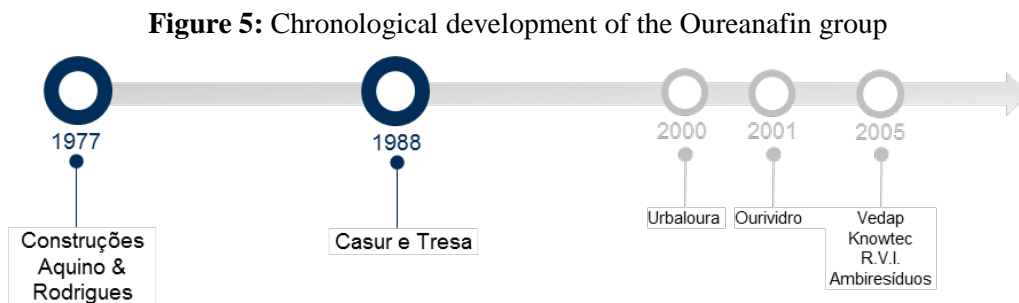
This case presents a real-life business challenge, which addresses a range of topics taught in business schools. The objectives of this case are:

- To provide students with a reasonable understanding of the construction industry, mainly in the specific area of WWTP segment;
- To analyse the possible options for differentiation of a product;
- To discuss the context of diversification of a group;
- General analysis and discussion of macro and micro analysis such as: Porter's five forces, PESTEL analysis, SWOT analysis;
- Define the competitive advantages of a company;
- To acquire sufficient know-how to be able to decide between options when given the expected cash flows for each option.

## CASE ANALYSIS

### 1. *How would you describe Oureanafin's strategy over the years?*

First it is important to summarize the evolution of the company with the aid of diagrams:



Source: Authors' analysis

**Table 7:** Sphere of activity of the companies in the group

<b>Firm</b>	<b>Business field</b>	<b>In-text citation</b>
Sociedade de Construções Aquino & Rodrigues, Lda.	Public works - Water and wastewater infrastructures	Paragraph 2, page 8.
Casur Construções, S.A.	Construction and sale of multi-functional buildings in the Ourém region	Paragraph 2, page 12; Paragraph 4, page 14.
Tresa – Construções do Algarve, S.A.	Construction and sale of multi-functional buildings in the Algarve and Southern Alentejo	Paragraph 4, page 8; Paragraph 2, page 14.
Urbaloura	Construction of residential and non-residential buildings in Vila Nova da Barquinha	Paragraph 5, page 8.
Ourividro	Processing, assembling and marketing of flat glass	Paragraph 1, page 9.
Vedap	Landscaping and fencing works	Paragraph 4, page 9.
Knowtec	Maintenance of construction vehicles and machinery	Paragraph 4, page 9.
R.V.I.	Recycling of construction materials	Paragraph 4, page 9.
Ambiresíduos	Collection, transport and disposal of industrial and urban waste	Paragraph 4, page 9.

Source: Authors' analysis

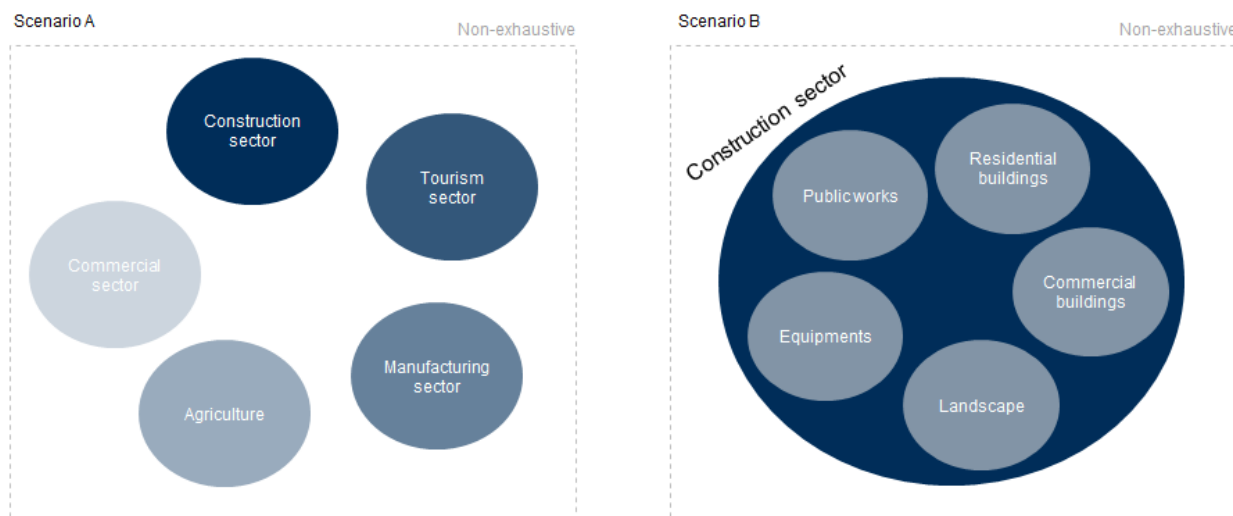
Founded as “Sociedade de Construções Aquino & Rodrigues, Lda” (later renamed “Aquino Construções, S.A.”), the company first specialized in public works but eleven years later it was

also working in the real estate business. We can say that the creation of Casur and Tresa were the kick off for diversification with the entrance in the real estate market.

However, before drawing conclusions about the strategy used by the company, it should be considered that the outcome of the response is correlated with the scope established for the analysis/review. That is, everything will depend on which industry is elected.

Whilst, on the one hand we can admit a more far-reaching scenario in which the concept of industry is related with the sector of activity of the company (scenario A – having the construction sector or the tourism sector as an industry), on the other we can be more specific and look at the area in which the company is operating (scenario B – having public works as an industry, construction of commercial buildings as another, etc.).

**Figure 6:** Concept of industry: scenarios A and B



Source: Authors' analysis

In this analysis it is consider scenario A and it's provided an analysis of chronological events.

In 1977, the group, still composed by only one company – **Aquino**, established itself in the construction sector as a public contracting company in the water and sanitation sector, serving clients such as the government and other public institutions.

With the creation of **Casur** in 1988, the group chose a “semi-diversification” strategy: though it maintained its production in the construction industry, it started to produce a new product range (residential and commercial buildings to sell); moreover, it reached new market segments starting to serve private clients and not only public customers.

Next, the group followed the market extension strategy by creating **Tresa** and acquiring **Urbaloura**. That is because, by keeping on building residential and non-residential developments, the group expanded their activity to other market segments, reaching not only the Ourém region (already covered by the other companies of the group) but also the Algarve and Vila Nova da Barquinha.

Besides, the strategy for Tresa happens to be also a vertical integration as it was a subcontractor working for Aquino in the Southern Regions, as described in the case. Therefore, Tresa contributes to the development of the primary activities of Aquino.

In 2001, the group opted for a real diversification strategy by acquiring **Ourividro**, a firm operating in the glass manufacturing industry. In addition, as glass is widely used as an input in the construction works, both in residential and non-residential buildings, the group followed a vertical upstream partial-integration strategy (partial because the group was not responsible for the management of the company).

One of the group's strategic options in 2005 was also diversification, covering industries engaged in:

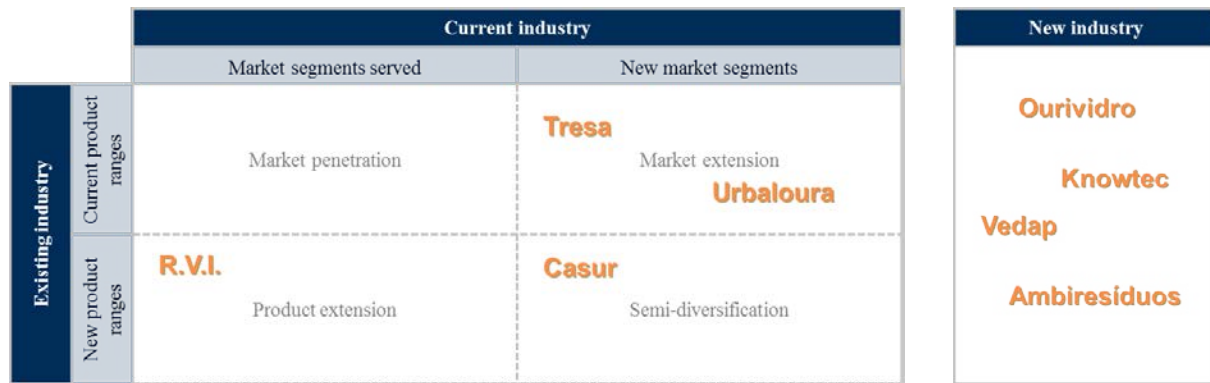
- The maintenance of machinery and vehicles – **Knowtec**;
- The collection, transport and disposal of industrial and urban waste – **Ambiresíduos**;
- Landscaping and fencing works – **Vedap**.

Furthermore, with the foundation of Knowtec the group entered in a vertical upstream total-integration process as from that moment on all the maintenance of the vehicles and machinery, used as support to the activity in the value chain of the group (mostly the Aquino ones), was carried out by this company.

Finally, a product extension strategy is adopted by founding **R.V.I.** as the group started to engage in a new range of products related with the construction activity undertaken by the other companies of the group.



**Figure 7:** Strategic evolution of the Oureanafin Group



Source: Authors' analysis

2. *Characterize the option the Board is considering for Aquino, taking into account that the insolvency plan is already approved and the company has the necessary financial support.*

Considering only the data in the case study description and the option of Aquino specializing in the area of WWTP from 2011 onwards, the following analyses have been carried out:

### **SWOT Analysis**

#### Strengths:

- Vast experience in operating in the construction industry (over 30 years);
- Know-how in the construction of WWTP;
- Amount to be charged in 2011 (over 21 million Euros);
- Certainty that major projects will be awarded in the short term (around 3,5 million Euros);
- Know-how created since 2000 in directional drilling in basic sanitation works which seems to be the future technology in public works;
- The investment already made in machinery and employee training in the construction of WWTP.

#### Weaknesses:

- Many staff members had to be dismissed or resigned;
- Weakened position: bankruptcy and lack of liquidity;

- Difficulty to compete with the prices offered by competitors in the public works sector.

Opportunities:

- Public investment in wastewater sanitation represents about 7% of the planned investment in major infrastructure works (2008-2017);
- The average customer service rate for wastewater sanitation (78%) is significantly lower than the rate set out in the national plan for water and sanitation (90%).

Threats:

- With the arrival of the troika less public works are predicted;
- Recession in the construction industry along with unsustainable growth of the construction sector over recent decades;
- Drops in turnover in public works;
- Massive bankruptcy of construction companies;
- Bank credit access restrictions.

**Table 8:** Suggestions taking into account the Opportunities, Strengths and Weaknesses for Aquino

Opportunity	Strengths	Weaknesses	Suggestions
Predicted high public investment in wastewater.	Over the last 3 years the firm was focused on this area;  High-level of expertise in this area;  Investment already made in machinery and employee training.	Many employees had to be dismissed;  Weakened position: bankruptcy.	1. Use of trained staff to focus activity on this area;  2. The commercial and the financial department should be focused on getting the best projects in this area, always adjusting the amount of projects to the firm's HR structure.

Source: Authors' analysis

**Table 9:** Suggestions taking into account the Threats, Strengths and Weaknesses for Aquino

Threats	Strengths	Weaknesses	Suggestions
Recession in the construction industry created mostly by the unsustainable growth of the sector over the recent decades and leading to many cases of bankruptcy of construction companies.	Over 30 years operating in the construction industry.	Difficulty to compete with the prices offered by competitors in the public works sector.	<ol style="list-style-type: none"> <li>1. Opt for refurbishing existing buildings, rather than building new ones.</li> <li>2. Use the firm's reputation in the sector to get more work projects in the future.</li> </ol>
Planned reduction of public expenditure.	<p>There is an amount to be invoiced in 2011 of works in progress or planned;</p> <p>Projects to be awarded.</p>	Weakened position: bankruptcy and lack of liquidity.	<ol style="list-style-type: none"> <li>1. If there is work in progress or works to be awarded the company should try to manage the money available to execute them as best as possible.</li> </ol>

Source: Authors' analysis

### **PESTEL Analysis**

#### Political or Legal environment

- The Portuguese economy has entered into recession and a Memorandum has been signed which stated, among other things, the reduction of public expenditure;
- Public investment in wastewater sanitation represents about 7% of the planned investment in major basic infrastructure works (2008-2017);
- The Ministry for the Environment, Spatial Planning and Regional Development set a minimum customer service rate for wastewater sanitation of 90%.

### Economic environment

- High unemployment rate of 12,7%;
- Recession in the construction industry;
- 4410 cases of construction companies in bankruptcy proceedings from 2009-13;
- Economic growth is expected considering that the economy is cyclic;
- Between 1991 to 2011 more than 80 thousand households per year have been built;
- Expressive decrease of GVA in the building sector in the last years;
- High level of inflation rate (3,65%);
- A decrease in 1,83% in real GDP from 2011 in comparison with 2010;
- Credit restrictions imposed by banks.

### Sociocultural environment

- The number of families increased by 11,6% and the population only by 1,9% from 2001 to 2011;
- Wide coverage of basic sanitation has become a crucial and priority factor to be considered among developed populations.

### Technological environment

- Better directional drilling tools are now used in basic sanitation work (methods of installing cables and pipelines in the subsoil without having to excavate and demolish roads, highways or historic centres).

### Environmental issues

- Sanitation is a crucial factor in developed countries for environmental reasons and public health safeguarding.

**Table 10:** Impacts of the trends in the firm’s activity

Dimensions	Trends	Impacts		Notes	Importance of the issues	Likelihood of the issues
		Positive	Negative			
<b>Political or legal</b>	Economic instability with consequent reduction of public spending. But with high investment planned for wastewater treatment in the years to come.	Despite the economic instability many government projects are foreseen in the area of operation proposed for the firm (WWTP).			Critical	Extremely likely
<b>Economical</b>	Restriction of financing by banks in the short term and near future.		No access to credit from banks to keep the firm in business.	This potential problem is already solved in the short term as the insolvency plan ensures financial guarantees in order to keep the firm in business.	Critical	Certain

Dimensions	Trends	Positive impact	Negative Impact	Notes	Importance of the issues	Likelihood of the issues
<b>Economical</b>	Projected economic growth and a decrease in the unemployment rate in the medium-long run.	More money for investments with the increase in public expenditure.			Important	Likely
	Recession in the construction industry along with bankruptcy of many firms in the short term.	Less companies in the field of business to compete with the firm.	Scarce investments in the field.		Important	Certain
<b>Technological</b>	Increasingly better construction methods: cost efficient and environmental benefits.	Increased efficiency in projects with consequent cost reduction.			Important	Extremely likely

Dimensions	Trends	Positive impact	Negative Impact	Notes	Importance of the issues	Likelihood of the issues
<b>Sociocultural</b>	Increased concern with the reach to the population in terms of basic sanitation.	More sanitation projects are expected in the coming years.		In addition, the firm will be able to follow the market trends in terms of new sanitation systems and units.	Extensive	Certain
<b>Environmental</b>	Environmental concerns at the level of wastewater treatment.	Sanitation projects in the coming years and new areas of development in the future.			Extensive	Certain

Source: Authors' analysis

### **Porter's five forcers**

#### The bargaining power of buyers:

- As in public infrastructures there is only a major customer: the government/public institutions such as ministries, town councils, they can push the price down to a value that is convenient for them;
- Switching costs are low considering that in order to award a project the customer only has to tender for quotations and accept the price proposed by the best offer;
- The buyer has full information.

Taking into account the abovementioned factors the bargaining power of buyers is high.

#### The bargaining power of suppliers:

- Switching costs are low as switching between suppliers is just a quotation away;
- The number of suppliers is very limited within a given geographic area, which causes prices to rise.

Therefore, the bargaining power of suppliers is considered high.

#### The threat of substitution:

- There is no substitute to a WWTP, the only substitute that could exist is a new method derived from technological advances. However, to achieve a new product a huge investment in R&D is necessary.

Therefore, the threat of substitution is considered null.

#### The threat of new entry:

- Economies of scale: this is an important part of the business as the more WWTPs the company builds, the more raw-materials and sanitation systems it buys and each time for less cost;
- Product differentiation: there is some differentiation of product, mostly in terms of quality and efficiency of the system built, however that is not significant when comparing with the differentiation of products in other industries, because all companies have to reach the minimum standard required of the works (defined by national standards);
- Capital requirements: As said by one of the participants in the meeting, the investment to start operating in this field is huge, both in machinery and in employee training;
- Switching costs: no switching costs for consumers;
- Access to distribution channels: this requires a lot of time invested, the access is not easily achieved;
- Cost advantages: in this segment the benefits of learning and experience curve effect is huge.

Taking these variables into account, the threat of new entry is considered low.



### Competitive rivalry:

- The number of competitors is not significant. The company identified 12 companies in total which compete in the WWTP segment;
- The exit barriers are considered significant given the huge investments that have to be made;
- Consumer switching costs are low as explained before;
- The brand loyalty is almost insignificant since the Public sector is forced by law to promote public tenders in order to choose the company.

Considering the variables mentioned above, the competitive rivalry is medium.

**Figure 8:** Porter's five forces analysis for the WWTP sector



Source: Authors' analysis

According to the abovementioned variables, it can be concluded that the attractiveness of this industry is medium. Mostly because, despite being utterly attractive to operate in an industry with no substitutes and low threat of new entrants, it is less attractive when a firm operates in a field

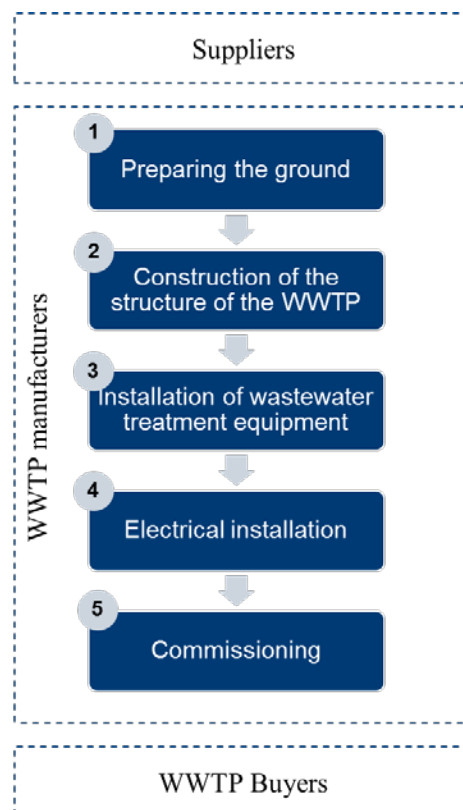
where the buyers have power to lower the prices of the product and the suppliers have power to raise the price of the inputs.

**3. Concerning the option the Board is considering for Casur, how would you characterize in terms of strategic diversification and competitive advantage?**

In the ultimate meeting of the Board, it was proposed that Casur should focus in a specific activity: installation of mechanical equipment in WWTP works. This strategic solution appeared due to the recent bankruptcies of Aquino’s suppliers and it is a way to achieve competitive advantage.

This competitive advantage is reached by using a “focus strategy” where the firm chooses a niche of market to operate. In this case, it was chosen to work in the field of the water and wastewater treatment equipment – stages 3 and 5 of a construction of a WWTP (as indicated on Figure 9).

**Figure 9:** Value chain for WWTP construction



Source: Authors’ analysis

Moreover, the specialization in this product line is a strategy of vertical integration in the group since this task is one of the primary activities included in the construction of a WWTP that was not practiced by the group before. This is a strategy of total integration, since the group is totally responsible for the management and has total control over the activities of Casur. It is also a strategy of downstream integration as Casur builds inputs used in the production of a WWTP.

**4. Regarding Tresa, which option do you consider to be the best: to liquidate the company or to restructure the business and implement an insolvency plan?**

**Consider these assumptions:**

- a. It is estimated that in the total liquidation option 10% of the guarantees will be enforced whereas in the insolvency plan option none of the guarantees will be enforced;**
- b. Weighted Average Cost of Capital = 12%;**
- c. Forced sale in liquidation auction occurs within two years;**
- d. The investment required to maintain activity is 400 thousand Euros;**
- e. The insolvency plan presupposes that:**
  - Inflows of 300 thousand Euros in the first year, 200 thousand Euros in the second and 1 million Euros per year in the following 8 years;**
  - Outflows of 10% of the total amount payable, estimated by the participant in the meeting, distributed equally between the first two years and the rest distributed equally over the following eight years.**

To start this analysis, it is important to estimate and compare the amount of money creditors are going to receive in each option.

## Liquidation scenario

**Table 11:** Calculation of unsatisfied amount in the liquidation scenario

Description	Total credit	Amount payable	Unsatisfied amount
Credit to employees	35.482,79 €	35.482,79 €	0,00 €
Public treasury	47.356,91 €	47.356,91 €	0,00 €
Social security	17.705,13 €	17.705,13 €	0,00 €
Guaranteed	3.439.661,33 €	2.745.003,76 €	694.657,57 €
Conditional credit	128.690,11 €	0,00 €	12.869,01 €
Other creditors	6.800.736,34 €	0,00 €	6.800.736,34 €
<b>Total</b>	<b>10.469.632,61 €</b>	<b>2.845.548,59 €</b>	<b>7.624.084,02 €</b>

Source: Authors' analysis

## Insolvency plan scenario

**Table 12:** Calculation of unsatisfied amount in the insolvency plan scenario

Description	Total credit	Amount payable	Unsatisfied amount
Credit to employees	35.482,79 €	35.482,79 €	0,00 €
Public treasury	47.356,91 €	47.356,91 €	0,00 €
Social security	17.705,13 €	17.705,13 €	0,00 €
Guaranteed	3.439.661,33 €	3.439.661,33 €	0,00 €
Conditional credit	128.690,11 €	0,00 €	0,00 €
Other creditors	6.800.736,34 €	3.400.368,17 €	3.400.368,17 €
<b>Total</b>	<b>10.469.632,61 €</b>	<b>6.940.574,33 €</b>	<b>3.400.368,17 €</b>

Source: Authors' analysis

It should be made clear that “conditional credit” is due to financial guarantees issued by the banks to ensure the quality of the works done by the company in the past. In the liquidation option, normally about 10% of these financial guarantees are claimed due to the need to correct failures caused by errors made in the construction of buildings and developments carried out in the past. Therefore, only 10% of 128.690,11 Euros was considered in this scenario. In the scenario of insolvency, the plan expects that the company will tackle the problems and correct any failure claimed. Thus, the guarantees will not be executed.

Comparing both scenarios, in the option for the insolvency plan, creditors are expected to receive more 4 million Euros (4.223.715,85 Euros) than if they decide to choose the total liquidation scenario.

In terms of estimation of **Net Present Value**, one should compare the profitability estimated for each option.

### Liquidation scenario

Given the information in question, the financial projection for this option is as follows:

**Table 13:** Calculation of Net Cash Flow for the liquidation scenario

	2012	2013
Inflows	1.405.033,08 €	1.405.033,08 €
Outflows	1.422.774,3 €	1.422.774,3 €
<b>Net Cash flow</b>	<b>-17.741,22 €</b>	<b>-17.741,22 €</b>

Source: Authors' analysis

**Equation 2:** NPV calculation for the liquidation scenario

$$NPV_{LS} = \frac{C_{2012}}{(1+wacc)^1} + \frac{C_{2013}}{(1+wacc)^2} - C_0 = \frac{-17.741,22}{(1+0,12)^1} + \frac{-17.741,22}{(1+0,12)^2} - 0 = -29.983,57 \text{ €}$$

Source: Authors' analysis

### Insolvency plan scenario

Given the information in question, the financial projection (in Euros) for this option is as follows:

**Table 14:** Calculation of Net Cash Flow for the insolvency plan scenario (in Euros)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Inflows	300.000	200.000	1.000.000	1.000.000	1.000.000	1.000.000	1.000.000	1.000.000	1.000.000	1.000.000
Outflows	347.028,72	347.028,72	780.814,61	780.814,61	780.814,61	780.814,61	780.814,61	780.814,61	780.814,61	780.814,61
Net Cash flow	-47.028,72	-147.028,72	219.185,39	219.185,39	219.185,39	219.185,39	219.185,39	219.185,39	219.185,39	219.185,39

Source: Authors' analysis

**Equation 3:** NPV calculation for the insolvency plan scenario

$$NPV_{IPS} = \sum_{t=1}^9 \frac{C_t}{(1 + 0,12)^t} - 400.000 = 308.811,52 \text{ €}$$

Source: Authors' analysis

**Table 15:** Comparison between the NPV of both options

Financial Measure	Liquidation option	Insolvency plan option
Net Present Value	-29.983,57 €	308.811,52 €

Source: Authors' analysis

It should be noted that according to the analysis based on the abovementioned assumption, the company is expected to generate revenue exhibiting a NPV of around 70 thousand Euros within 7 years.

Although the company will have to work for seven years without making any profit, the insolvency plan is the best option to choose in comparison to the liquidation option, because it is the one that pays more to the creditors.

## CONCLUSION

During the preparation of this case I had the opportunity to learn more about the construction industry, covering topics such as: the various components of a WWTP, the products a firm can commercialise in this industry, the characteristics of the industry that affect its attractiveness. Moreover, this thesis provided me a better awareness of the options available to firms filing for bankruptcy.

This case study was prepared with a special focus on the management of the company and the options they took: I have followed the developments in each of the three main companies of the Oureanafin Group from the date Aquino filed for bankruptcy until the moment this thesis is delivered (September 2015). This enabled me to provide a case study where students can explore the theoretical models they learned in the classroom.

The teaching notes and the literature review are intended to serve as guidelines for a classroom discussion.

Concerning the options given for each company in this case study, it is worth stating that in 2015 the companies are operating as follows:

- Aquino Construções, S.A. is still operating in the public works sector, however, the construction of WWTPs is their main field of activity and where the firm is winning public-sector tenders;
- Casur Construções, S.A. is specialised in the installation of water and wastewater treatment equipment while it prepares future projects in the real estate sector;
- Tresa - Construções do Algarve, S.A. is presenting projects and plans to finish the buildings and sell the houses of the Quinta da Cerca residential development in Castro Marim;
- Urbaloura is undergoing a process of discontinuity of all business activities;
- Part of the equity of Vedap has been sold and the company is now managed by the majority partners;
- As far as Knowtec, R.V.I. and Ambiresíduos are concerned, they were wounded down and are now closed.

## **LIMITATIONS**

Despite the detailed analysis, some limitations should be underlined mainly when it comes to company and industry data.

Access to information concerning existing companies in the WWTP segment was almost impossible and so I had to use the ones identified by the company in the tenders attended.

In addition, the data demonstrated in Tresa's insolvency plan didn't result in a positive NPV, mostly because of the projections made by the management in 2011. This led me to include illustrative data.

Also to be noted is the fact that the information in this case is supported only in documents supplied by the company and interviews with the management. Therefore, some information may be interpreted as subjective.



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