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Financial Consulting Internship in Valencia: Alternative Investments and AI

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By

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<u>Introduction</u>

During the summer before my senior year, I had the opportunity to work as a research analyst in the finance department of TuaTeam, a financial and strategic consulting firm in Valencia, Spain. TuaTeam is a relatively new firm that serves its clients in a wide range of areas, from strategic restructuring and business model development to finding funding for future projects and identifying/evaluating potential investment opportunities. TuaTeam also works closely with communities around Spain to foster innovation and development among youth and professionals seeking to gain experience in new trends in technology and cultural enrichment. The company currently holds classes through a partnership with CEITúria in artificial intelligence, innovation, and robotics.

Being able to work on a variety of projects gave me a broad understanding of the clients and operations of their businesses. However, the most interesting work that I did went in-depth into specific areas of our clients' needs. My role included supporting clients in a range of projects. At the beginning of the internship, our primary focus was on events and competitions hosted by the European Union. I had the responsibility of learning about the clients' needs, completing the preliminary research on the events and their cultural significance, and presenting to the TuaTeam leadership or clients on how to execute their plans. Towards the end of the internship, I worked on a handful of other research projects for TuaTeam and our clients, including identifying AI applications to increase workplace efficiency, evaluating the competitive landscape, and developing guides and models for alternative investment projects.

Professional Development Objectives

My primary objective in terms of my professional development was to hone my research skills. Regardless of the specific career that I chose after graduating, in assessing and executing investment decisions, it is crucial to be able to efficiently find relevant information and evaluate data and sources to draw conclusions. I also hoped to develop my analytical and presentation skills through this experience.

Personal Development Objectives

This experience was the longest amount of time that I had lived on my own as well as my first time being in a foreign country. As such, I anticipated a long list of challenges that I would face in the process of embracing the cultural differences of my new environment. I aimed to demonstrate an increased level of cultural competence because the world of business has become dramatically more globally focused and connected in recent years, and this trend will likely continue. Supporting multiculturalism would involve overcoming language barriers and learning to communicate effectively in a professional setting. I also hoped to debunk stereotypes from both my perspective and those I interacted with early and remove my ethnocentric orientation. Another personal goal that was important for me in a broader sense was learning to adapt to a new environment outside of my comfort zone.

<u>**Weekly Reviews:**</u>

Week One Overview: *May 20, 2023*

During my first week, I became oriented with the company through their internship training and information platform, TuAcademy. There were three other interns that I worked with: two in-person interns from Italy and London and one intern working remotely from Vancouver. Due to the significant commute from the city to the office where I was placed, I worked remotely one or two days each week. On the first day, I met on Zoom with the CEO of the company, Borja Sanz, to discuss my role and meet the other interns.

My first task was to research the grants offered by the European Innovation Council (EIC). After each member completed the research on the areas that we were assigned, our team created an informational presentation for the leadership of TuaTeam about the opportunities for funding available through the EIC, including the EIC Pathfinder, EIC Transition, and EIC Accelerator programs. The objective of each of these programs is to support the development of breakthrough technologies and innovations at different stages of their development.

After completing and presenting this presentation, our team began creating a document to serve as a format for TuaTeam's clients who intended to apply for EIC funding. This document contained an overview of the objectives of the funding opportunities, the requirements, and detailed information listing each step of the application process. After preparing the necessary application documents, we met again with the leadership team of TuaTeam and representatives from the companies we were working with to present the overview of the application process and discuss which funding opportunity was the best fit for each, based on which stage of development each company's project was in.

Week One Reflection

My introduction to TuaTeam was entirely different from what I expected in terms of the work environment and my role in the company. Initially, efficiently communicating with my coworkers was one of the areas I had to navigate most quickly. Among the full-time workers at TuaTeam, only the CEO spoke English fluently and was therefore the only source of information that the interns received regarding our tasks. Considering his position and level of responsibility in the company, he was often very busy, so we typically only communicated with him briefly once or twice a week to give or receive updates on our work. The other interns did not speak enough Spanish to communicate with our supervisor, nor did I when I arrived, so we utilized translation apps when we had questions about company resources, logins, and other specifics. Within the team of interns, our work schedules ranged significantly based on our locations and side projects, and we had to find time outside of normal office hours to collaborate on each task. These barriers in communication were difficult to overcome at the beginning of the internship when each of us was becoming acclimated to our roles. In fact, during our first presentation of our EIC research to the leadership, we received lots of negative feedback, but after clarifying the direction of the project, we were able to start again and present the information to the client in a useful way.

I also learned quickly that I would not have a typical day-to-day list of assignments, and instead, my time would be spent on whichever new project the company needed support with. This was very exciting to me, as I quickly gained exposure to each area that we were thrown

into. I learned the basics of the structure and policy of the European Union from our research about the EIC, as well as the funding opportunities that are available for for-profit businesses that collaborate with research institutes and community-based organizations to develop products that contribute to the future of society. At such an early stage in the internship, I had the opportunity to meet with our clients to discuss their next-level business ideas for innovations like AI applications for traffic management, clean energy technology, and quantum information processing.

Week Two Overview

After jumping in headfirst into a major project, on Monday of the second week, we took a step back to learn more about the industry we were working in and TuaTeam's competitive landscape. We were each assigned a city in Spain and tasked with compiling a list of competitors that provide similar consulting, legal, or advising services for the company's internal database. Then, we created a spreadsheet with the contact information, description, and core competencies of each company.

After this, we completed an 80-page informational document outlining the process for identifying potential investment possibilities for our company as well as similar opportunities for clients. This report also contained a detailed description of valuation methods for private company transactions, as well as a comprehensive list of potential areas for a company to improve to increase the value of its organization before a sale.

During the last two days of the week, we began creating a proposal for the European Week of Regions and Cities event. TuaTeam will be participating in this event in the fall of 2023 by hosting a "side event." This consists of a discussion/debate between a group of panelists that is mediated by a representative from the submitting organization, in this case, the CEO of TuaTeam. The side event discussion must address one of the themes that are provided by the European Union for this year's event. The themes that I researched and developed proposal discussions for were "Regions in Post-Industrial Transition" and "Small and Mid-Size Urban Centers Driving Growth." After discussing as a group which topics to pursue, we compiled a list of potential local community leaders who could participate as panelists in the discussion.

Because TuaTeam often hires interns from around the world, I also had the task of creating a training video for the new hires to watch during their training. This video was about 5 minutes long and consisted of instructions for creating the proper company accounts and emails, accessing and using the project management software that is used at TuaTeam (mainly Trello and Coda), and translating the existing company training website from Spanish to English.

Week Two Reflection

During the second week, I started to feel more comfortable with my surroundings. I started eating lunch with my coworkers outside of the internship team and talking to them about the company and their work life. This was an important step for me in understanding the direction that the company was moving in the future and in getting used to the cultural differences between Spanish workplaces and those in the United States, particularly in how employees of different tenures interacted and the work and break schedule that they followed. By researching the differences between similar competing firms in the surrounding competencies, I began to gain a better understanding of the nature of what TuaTeam did on a day-to-day basis.

This task was insightful in that it gave me a more thorough grasp of the range of capabilities of a financial consulting firm and potential career opportunities in this field.

Moreover, I was excited to begin a project that seemed to directly relate to the investment research career path that I was pursuing. A lot of my work at the University of Arkansas has been tied to investment philosophy and valuation techniques, and while most of my studies have been focused on fixed income and public equity analysis, I am particularly driven to learn more about private equity investment. My experience networking, interviewing, and discussing the finance industry with professionals on campus has shown me that there is a significant and increasing draw in the wealth management field for allocation in the alternative investment class. This project gave me my first real exposure to this area.

Our work with the European Week of Regions and Cities project was similar to our work on the EIC funding opportunities, but the event was unique, and I had a much more hands-on role in determining the content of the events that we would deliver. Unlike the EIC project, where clients had a technology/process in development and we were tasked with informing them on the requirements of the funding, during this assignment I had the chance to have input and propose the discussion topics for the event based on research that I did into relevant issues involving the broader community. Though I was initially disoriented by all the changes in moving to a foreign country and working in a new field, I was glad that by the second week of my arrival, I had the responsibility and ability to describe the company and internship program to incoming interns.

Week Three Overview

On Monday of the third week, our proposal for the European Week of Regions and Cities side event was approved by the management team of TuaTeam. After creating an account as representatives of TuaTeam on the European Union website, we created a template of the side event application and drafted an application using the information from our proposal. The next day, our supervisor briefed us on five clients who also wanted to apply for their own side events. The clients and their preferred topics for the side events were TuaTeam (innovation and entrepreneurship), AUDITA (environment, agenda 2030, audits, etc.), ElKalambraso (communication, video production, etc), UnicornsHUB (special education), ION Data Science (Machine Learning, AI, etc.), and Asociación Rurada (non-profit EU funds, etc.). We drafted six applications for each of these and met with the management team to explain the discussion topics and have them approved for submission.

At the end of the week, each of us edited the documents we had created to match the style and format of the TuaTeam website and existing client resources. The topic I chose to cover was "How to analyze the economy and market conditions to find the optimal time to sell." This was a high-level view of economic analysis meant to introduce clients to key indicators and factors that can potentially affect the success of a sale or investment in a company. My research focused on the impacts of government policy and consumer patterns and sentiment on different industries and gave an overview of how to analyze economic indicators and indices to identify turning points in the business cycle. This document also included a guide to the resources that investors can use to learn and stay up to date on market trends and their effects. I supported this research with case studies on previous real-world mergers, company sales, and divestitures and their implications, such as the purchase of Whole Foods in 2017 by Amazon and the sale of LinkedIn in 2016 to Microsoft. After we completed editing our documents, we created a presentation in

PowerPoint to deliver an overview of the key points of our documents to the management team of TuaTeam and discuss whether we would continue with this project or start something new.

Week Three Reflection

Though the first two weeks of my internship seemed to bounce from one project to the next without as much connection between the assignments or follow-through involvement from the interns as I expected, it was reassuring to see that our clients had seen our work, liked it, and perceived that our team of interns could add value by continuing to work on the Side Events project. The side events would be broadcast and uploaded to the European Union's event website. One of the more intriguing aspects of this project was a component of the application that required finding and contacting potential panelists for each discussion, and while TuaTeam and each participating client would host their own discussion, the majority of each seminar consisted of influential speakers discussing problems that they saw in the community regarding each topic and identifying potential solutions. I thoroughly enjoyed talking to community leaders during this process about the topics that we had curated and learning from their feedback.
I was also excited to continue working on the "Wikipedia of Investments". Our meeting with the team went very well, and the CEO told us that he planned to use the material that we were creating to increase the visibility of the financial consulting services of the company. The key feedback that we received was to begin working more independently to expand the scope of the project.

Week Four Overview

We spent the fourth week of the internship working on the expansion of the 'Wikipedia' of Investment FAQs for the company website. In the morning, we met with the management team of TuaTeam to present the three documents that we completed during Week 2, discuss the direction of the additional content that we would create, and brainstorm six new questions to begin researching. On Thursday, we had a new group of interns arrive, and I explained to them the roles of the interns at TuaTeam, introductory tasks, instructions for getting set up with the company accounts and software, and the projects that we were working on. For the remainder of the week, we brainstormed new questions and created content for the documents. Most of my research and documentation during this stage of the project covered various models used for company valuation and how to approach factors that differ between the valuation of a public company and a private company, including lack of information, control premiums, and determining the appropriate multiples. The following is a list of the topics that our team chose to cover, with topics 4-9 completed during this week:
1. How to find successful investment opportunities
2. How to analyze the economy and find the optimal time to sell
3. How to increase company value before sale
4. Transitioning process once a company is sold
5. How to most effectively analyze the market
6. How to analyze the value of a management team of a company
7. How to successfully evaluate the price of a company
8. How to identify and avoid potential risks to a company
9. How to understand legal complications to company mergers and sales

Below is an excerpt from one of the documents that I worked on covering company valuation:

Methods to Valuate a Private Company

Public vs. Private

Determining the value of a privately-held company differs significantly from determining the value of a publicly-held company in ways that often make the acquisition of a privately-held valuation relatively more difficult and expensive.

Gaining access to the necessary information to evaluate private companies can be difficult, as they are not as transparent and are not required to disclose financial information regularly. Publicly-held companies must provide quarterly and annual reports, audited financial statements, management discussion and analysis, and other filings with regulatory bodies. Furthermore, when discussing the value of a public company, many people are often referring to the intrinsic value, or the fundamental, objective value of the company, as the market value can be estimated by the current stock price of the company multiplied by the total number of shares of equity.

Approaches to Valuation

Determining the fair market value of a company's assets can include many factors, such as its capital structure, company management, and prospects for future earnings. This process can also be done using a variety of methods, as well as a combination of methods. However, the pricing of a company is primarily based on its profitability. See Annex II for detailed methodology on the construction techniques and analyses of the following descriptions.

Multiples Approach
The multiples approach utilizes financial metrics to determine the intrinsic value of a company.

1. Earnings Before Interest, Tax, Depreciation, and Amortization (EBITDA): EBITDA is a widely used measure of earnings that allows potential buyers to compare the values of multiple companies. By adjusting earnings for factors such as interest and other company-specific variations, EBITDA provides a consistent basis for comparison, even for companies with different capital structures.
2. Seller's Discretionary Earnings (SDE): SDE is often used when an individual is buying a company. Unlike EBITDA, it includes the wages paid to the owner. SDE represents the profits that can be derived by a new owner while considering the discretionary expenses of the previous owner.

The value of a company is determined by applying a multiple to the chosen measure of earnings (such as EBITDA or Net income). The appropriate multiple depends on factors such as the size and industry of the company, as well as its growth potential, risk level, and revenue consistency. For example, companies with less than $5 million in revenue typically have multiples between 1.5x and 4.0x earnings, while companies with revenue between $5 million and $200 million may have multiples ranging from 3.0x to 6.0x. Larger companies with steady revenue and less risk often command higher multiples. It's important to note that economic conditions can influence the value and multiples applied.

DCF Model
Similar to the multiples approach is the Discounted Cash Flow (DCF) Method. However, rather than using historical measures of earnings, a DCF Model attempts to project the future cash flows of a company. These cash flows are then discounted according to a reasonable measure of risk to arrive at the present value of future cash flows. This is a versatile valuation method that allows users to adjust various inputs and assumptions to evaluate different scenarios. Depending on the time horizon of the investment or to account for the cash flows beyond the explicit projection period, it is common to incorporate an exit multiple or terminal value. However, due to the need for detailed assumptions and the differences in accounting

Week Four Reflection

This week, I began to have more autonomy in my role, which gave me the ability to research areas that I had personally been interested in learning more about while simultaneously contributing my efforts in a way that aligned with the company's goals. Each of our teammates became noticeably more engaged in the work that we were doing because we were given the chance to be creative in the way that we approached this task.

We began working and communicating more efficiently with each other. The most difficult challenge we overcame was including the remote interns who lived in different time zones. One intern on our team was working from Vancouver, Canada, and her workday began around the same time that ours was ending. We began meeting at 7:00 AM Spain time to stay up to date on the work that she had completed on the investment project. Likewise, at 6:00 PM we met again to keep her informed on any changes in the process from the office. Another challenge that I faced was delegating this project to the new interns. In their first week, I was unsure that they would fully understand the purpose of this project, but to increase the scope of the project in the timeframe given by management it was necessary to include each member of the team in the work. By the end of their first week in the office, I saw that their ideas and efforts had provided invaluable additions to the project. Although each of us began working autonomously on the topics we were covering, as we worked longer on the project there was a lot more collaboration on ideas for what to cover and how to go more in-depth into each topic.

Week Five Overview

On Monday, I continued to edit the content that we had created about investment FAQs. On Tuesday, our team met with the marketing director of TuaTeam, Carlos Aznar, and were briefed about how the company wanted to use the content that we had created. The PDFs were to be summarized in a blog that could be published on the company website. The criteria for this included a 300-to-500-word limit, a reasonable level of readability, keywords included that pertain to the topic, and a title that passed certain tests to increase the exposure that the blog and company website would receive online (and a few others). Carlos also introduced us to the software system that we would be using to create these blogs, WordPress. After this, we finalized our content by standardizing the format, checking for grammatical errors, etc.

Wednesday, we familiarized ourselves with WordPress. After watching a few tutorials about the software, we also learned about a Google Chrome extension, Keyword Surfer, that was necessary to use to ensure that our blogs would receive an optimal level of exposure based on the keywords that we attached to the website. We then created titles for the blogs and keywords.

During the end of the week, I learned about a digital marketing strategy often used with blogs, in which further engagement with the company's digital content is increased greatly by links embedded within the content. I mapped out the most sensible progression of links (internally to other blogs and externally to the content that we had created) that each blog would need. Next, I showed the rest of the team this progression plan, and we began reviewing the investment documents and choosing the content that could be best adapted for the blogs. Finally, we wrote a summarized blog post for each document that we had created. Then, we translated each one into Spanish and collaborated with one of the TuaTeam teammates in the office in Estonia to translate them into Estonian as well on WordPress.

Week Five Reflection

The shift in our project during this week was frustrating for a couple of reasons. At the outset of our research and drafting the full-length documents, we were not aware that the format of the final product for the company's website would be a series of blogs and that the documents would be used for internal purposes. The requirements for these blogs were stringent, and it was difficult to summarize our research in such a succinct manner without excluding too many of the main points. It also required a considerable amount of time to check that the blogs made sense after being translated, especially in the sections that included more technical vocabulary. However, it was reassuring that the TuaTeam marketing and management teams approved of our work and were eager to have it published as a representation of the company.

Week Six Overview

During Week 6, we continued editing the blog posts to obtain sufficient Yoast SEO (Search Engine Optimization) scores on WordPress. The software we used to optimize search engine performance considered the way that search engines manage search results to provide users with the best results. These scores were based on the criteria mentioned in Week 5 as well as factors including paragraph length, vocabulary, and others that would improve the performance of our content through search engines. Then, we met with Carlos and had the blogs approved for publication on the company website. Finally, we formatted the blogs to fit the TuaTeam website format, added suitable pictures to the blogs, and created a publication schedule for the dates that each blog would be published. Below is an excerpt from one of the blogs that I published titled "The Economic Environment in Business," though unfortunately an English version is not available:

El Entorno Económico en Negocios

junio 21, 2023 por Manson

Ser capaz de identificar el momento óptimo de venta de activos y emprendimientos comerciales, requiere un profundo conocimiento del entorno económico. Esto implica analizar diversos factores económicos que controlan la dinámica del mercado. El entorno económico se compone de elementos como los aspectos económicos, políticos, tecnológicos, sociales y legales. Entre ellos, la economía es vital para el crecimiento y está constantemente sujeta a cambios.

A la hora de tomar decisiones, los empresarios e inversores deben analizar cuidadosamente los factores económicos que afectan tanto a los mercados nacionales como internacionales. Algunas herramientas esenciales utilizadas en el análisis económico son: La evaluación de las tasas de crecimiento del PIB, los niveles de inflación y las tasas de interés. Las herramientas adicionales incluyen datos de empleo y patrones de gasto del consumidor.

Un número significativo de factores económicos juegan un papel crucial en la determinación del valor y el desarrollo de una empresa. El crecimiento del PIB real refleja la fortaleza económica que provoca un aumento del gasto de los consumidores y la demanda de bienes y servicios. La tasa de desempleo afecta los costos laborales, la rotación de empleos y las políticas gubernamentales con respecto a los incentivos para las empresas. La tasa de inflación afecta el endeudamiento, los hábitos de gasto y la estabilidad económica. Las tasas de interés influyen en los costos de endeudamiento y en el rendimiento esperado.

Además de los factores económicos mencionados, también es esencial tener en cuenta el sentimiento de los inversores y la confianza en el mercado. La disponibilidad de capital y liquidez puede afectar significativamente el éxito de la venta de activos o empresas comerciales. Es importante recopilar datos de diferentes fuentes, como informes de investigación de mercado, cobertura de noticias, conferencias de inversores, encuestas y llamadas de analistas. Estas fuentes pueden proporcionar información sobre el sentimiento de los inversores.

La contratación de profesionales (analistas financieros, tasadores, contadores y corredores de negocios) también puede proporcionar una valiosa experiencia para determinar el momento adecuado para vender. Su conocimiento puede mejorar el proceso de toma de decisiones y ayudar a evaluar los paisajes económicos actuales de manera efectiva.

Teniendo en cuenta los muchos factores dentro de la economía es necesario a la hora de vender activos y emprendimientos comerciales. Para tomar decisiones financieras bien informadas, los empresarios e inversores deben analizar los indicadores económicos, monitorear la confianza de los inversores y buscar asesoramiento experto. Este amplio alcance de conocimiento les permite maximizar el valor de sus transacciones.

Para obtener más información, haga clic aquí.

📁 Blog
‹ Evaluación de la gestión
› Gestión de riesgos de una empresa

🇪🇸 Spanish

Week Six Reflection

      This week was mostly about finalizing our research project and completing the finishing touches to upload the content we had created to the company website. Our focus was on increasing the marketability of TuaTeam's services to the public. A lot of TuaTeam's new business currently comes from relationships and word of mouth, however, as the company seeks to grow its client base, the marketing team believes that website visits can provide an area of significant growth in the company's future operations. It was very interesting to see the marketing techniques that companies can use to take advantage of the technology that consumers use on a day-to-day basis. This area of the project was also new to all of us on the intern team, so we had to ask a lot more questions throughout the process to ensure that we fully understood the end goal. I was especially concerned about getting this part of the project right because once we finished this, all our work would be uploaded to the company website. Each blog would serve as a representation of the intern with their name attached to it and the reputation of TuaTeam. To save time and avoid wasting the marketing team's time with emails and Zoom calls throughout the day, the four of us came together every afternoon to discuss any issues we had, determine if we could resolve them ourselves, and if not, we compiled a list of inquiries to send to the marketing team at the end of the day.

Week Seven Overview

      The next week, we were tasked with updating a database that the company keeps of records of the political environment in Spain. This consisted of updating lists of all of the municipalities in eleven regions of Spain. The lists contained the voting status of each political party, the current mayor, and contact information for the government office. We updated the lists with the results of the most recent elections and made note of major changes in the party votes and the changes in the mayors.

      Once we completed this task, our CEO informed us that one of our larger technology-based clients was interested in incorporating artificial intelligence into their activities and wanted to learn more about the programs available. During the last three days of the week, we researched AI apps that have the potential to increase productivity in the workplace. After researching a variety of applications, we compiled a list of the twelve apps that could be most useful to employers in our industry with descriptions of each app. Finally, we created a presentation on an AI presentation creation program that we had used for a few of our previous projects, Beautiful.ai. A few of the other applications we covered were TLDV (an app for reporting, summarizing, and scripting meetings and video calls), Bardeen (used for customizing workflows and automating tasks like data entry, email sending, etc.), and Mem (used for managing databases of notes). We also made a separate presentation for TuaTeam on two video and content creation software, Fliki and Surfer, as these are two programs that we believed could be particularly beneficial to our marketing team.

Week Seven Reflection

      After working long hours in the last few weeks to finish our project on time, it was nice to have a couple of days of easier work and help other people around the office. As I mentioned previously, TuaTeam does a lot of work for and with local government and NGOs, so the office

consistently maintains databases on relevant changes that occur. Updating the lists of contact information mostly required learning a broad overview of the political parties involved in elections and making phone calls to the offices of the municipalities when the information we needed was not available online.

Though we didn't receive very much information on the AI project, it is a topic that I have been intrigued with for the last few years and was excited to dive into. I have learned about some of the high-level areas that AI is impacting, but this was my first time learning about specific programs and their practical applications. Furthermore, I was proud of our team for taking the extra initiative to create a presentation for our marketing team, and after showing it to the company, I believe the extra time that we spent paid off. For a company as young as TuaTeam, fighting for market share in a competitive industry is key to the firm's long-term success. With limited resources, making efficient use of every employee's time is crucial, and towards the end of the summer, I saw a few of my coworkers practicing with the voiceover feature on Fliki while making a video for the company's social media. It was also fun to show our supervisor how one of the programs on the client presentation worked while presenting on that same software.

Week Eight Overview

At the beginning of Week 8, the three interns I worked with moved back to their respective countries as the company invited three new interns into the office from Hong Kong and North Korea. I began explaining to them the layout of the internship and getting them set up and familiarized with the company accounts and software. We then learned how to use Markdown language to translate government documents and bulletins. Markdown is a relatively easy-to-use language that the company uses for creating web content, and they store many translations in TuaTeam's databases for formatting purposes.

Throughout the week, I also had an individual task of creating a financial model for potential real estate investments that the TuaTeam was considering in Lisbon and Portugal. My instructions were to create a financial model template that could be easily adjusted and filled in with inputs from different properties that our company or clients were interested in. On Friday, I took a brief hiatus from this to search for equipment for the company vehicles/vans, such as solar panels for the electrical setup. We have a team that takes weekly trips to the different cities where we have projects for meetings.

Week Eight Reflection

The new interns did not work in the finance department with me, so I worked alone on the real estate model project. However, I was very glad to work closely with them for the remainder of my time in Spain. Their focus was on computer science and robotics, and though I am not familiar with robotics, I have been learning more about the applications of coding languages in quantitative finance and I was eager to gain insight from them in the areas of our studies that overlapped. They were quick learners, and it did not take them long to adjust to the structure or processes of the job. However, English was their second language, and they did not speak Spanish, so I did a lot more translating between the interns and full-time employees during my last month.

I was thrilled to begin working on the cash flow model and felt that this was a project that I was both well-suited for and able to learn a lot from. I have spent a considerable amount of time during my undergraduate working with Excel to create financial models and I thoroughly enjoy the process of developing these models. Up to this point, all the models that I had created were used to forecast the financial performance of publicly traded stocks, but I was confident that I could apply these skills to forecast the potential investment performance of more tangible assets.

Week Nine Overview

To start the real estate valuation project, I began using any online resources that I could find to learn how to create the model. After combing through websites for a background of the purposes and key components and watching hours of crash course videos online of different people's approaches to this subject, I felt informed enough to try to make my own. The model I created included two pages of assumptions and four pages of cash flow analysis based on these assumptions. The first page of the assumptions consisted of general information about the property, financing details, and investment strategy specifics, while the second assumptions page could be filled in with estimated construction costs if the project called for development. The other four pages would then be populated with forecasted monthly, annual, and partnership cash flows as well as a summary of the equity and returns during the investment period. Below are excerpts from the cover assumptions page and the partnership cash flow forecasts in the English version of the model:

| ASSUMPTIONS (INPUTS) | | | | CEI Túria |

General

Property Name	CEI Túria
Property Address	Carrer de Valencia, 37
Property City, State	Vilamarxant, Valencia
Strategy	Flip
Unit Type	M2
Building Size (M2)	2,000
Land Size (M2)	

Timing

Purchase Date	Jan-2022
Months to Renovate	4 months
Hold Period (Months)	
Months to Market	48 months
Investment Period	52 months
Estimated Sales Date	31-May-26

Acquisition + Investment	/M2	
Purchase Price	1,750.00	3,500,000
Closing Costs (%)		1.50%
Due Diligence Cost ($)	0.00	
Construction Budget	13.25	26,500

Disposition	/M2	
Sales Price	2,075.00	4,150,000
Broker Commission (%)		6.00%
Other Closing Costs (%)		1.00%

Fixed Operating Expenses	/M2	
Property Tax (Monthly)	0.65	1,300
Insurance (Monthly)	0.16	325

Financing	/M2	
Loan-to-value		70.00%
Loan Amount	1,225.00	2,450,000
Mortgage Interest Rate		5.00%
Mortgage Term (Years)		30 years
Interest-Only?		No
Monthly Payment	6.58	13,152.13

Rental Operation	/M2	
Monthly Rental Rate	17.00	34,000
Variable Op. Expense/Month	1.60	3,200
Property Management Fee		0.00%
Days Vacant per Year		20 days
Vacancy (%)		5.48%
Capital Reserve (% of Income)		10.00%
Ann. Income Growth Rate		3.0%
Ann. Expense Growth Rate		3.0%
Take Occupancy Month		Month 5

PARTNERSHIP CASH FLOW AND RETURNS

				Year 0	Year 1	Year 1	Year 1	Year 1	Year 1	Year 1	Year 1	Year 1	Year 1	Year 1
				Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
				31-Jan-22	28-Feb-22	31-Mar-22	30-Apr-22	31-May-22	30-Jun-22	31-Jul-22	31-Aug-22	30-Sep-22	31-Oct-22	30-Nov-22
Property-Level Cash Flows														
Uses of Capital			Amount											
Purchase Price			3,500,000	3,500,000	-	-	-	-	-	-	-	-	-	-
Renovation			26,500	-	6,625	6,625	6,625	6,625	-	-	-	-	-	-
Closing Costs			52,500	52,500	-	-	-	-	-	-	-	-	-	-
Due Diligence			-											
Carry Costs			772,807	-	14,777	14,777	14,777	14,777	14,777	14,777	14,777	14,777	14,777
Total Uses of Capital			4,351,807	3,552,500	21,402	21,402	21,402	21,402	14,777	14,777	14,777	14,777	14,777
Sources of Capital	Order	Check	% of Total	Amount										
Mortgage Loan	1	OK	56.30%	2,450,000	2,450,000	-	-	-	-	-	-	-	-	-	-
Owner/Sponsor	2	OK	18.70%	813,855	813,855	-	-	-	-	-	-	-	-	-	-
Investor #1	3	OK	25.00%	1,087,952	288,645	21,402	21,402	21,402	21,402	14,777	14,777	14,777	14,777	14,777
Investor #2	4	OK	0.00%	-	-	-	-	-	-	-	-	-	-	-
Total Acquisition Costs				4,351,807	3,552,500	21,402	21,402	21,402	21,402	14,777	14,777	14,777	14,777	14,777
Sufficient Capital Check				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Partnership-Level Cash Flows												
Preferred Return	%	**Excess Cash Distribution**	%		**Contribution Percentage**		%					
Owner/Sponsor	6.0%	Owner/Sponsor	42.8%		Owner/Sponsor		42.8%					
Investor #1	6.0%	Investor #1	57.2%		Investor #1		57.2%					
Investor #2	6.0%	Investor #2	0.0%		Investor #2		0.0%					

Partner Returns	Equity Multiple	IRR	Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
Owner/Sponsor	0.83X	-4.27%	(813,855)	-	-	-	-	-	-	-	-	-	-
Investor #1	0.83X	-6.89%	(288,645)	(21,402)	(21,402)	(21,402)	(21,402)	(14,777)	(14,777)	(14,777)	(14,777)	(14,777)	(14,777)
Investor #2	0.00X	0.00%	-	-	-	-	-	-	-	-	-	-	-
Equity Total	0.83X	-5.47%	(1,102,500)	(21,402)	(21,402)	(21,402)	(21,402)	(14,777)	(14,777)	(14,777)	(14,777)	(14,777)	(14,777)
			(1,102,500)	(21,402)	(21,402)	(21,402)	(21,402)	(14,777)	(14,777)	(14,777)	(14,777)		

Contribution %		%	Amount	Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
Owner/Sponsor		42.8%	813,855	813,855	-	-	-	-	-	-	-	-	-	-
Investor #1		57.2%	1,087,952	288,645	21,402	21,402	21,402	21,402	14,777	14,777	14,777	14,777	14,777
Investor #2		0.0%	-	-	-	-	-	-	-	-	-	-	-	-
			(321,776)	1,102,500	21,402	21,402	21,402	21,402	14,777	14,777	14,777	14,777	14,777

On Friday, after I was confident that my model would be up to the standards of the management team, I scheduled a meeting to present it to them that afternoon and began working on a presentation covering a brief introduction to commercial real estate investing, the necessary due diligence before taking on these projects, and other factors involving the legal, tax, and environmental implications.

Week Nine Reflection

Approaching the end of my internship, I was determined to finish my last project and give it my best to leave a good last impression on the company and contribute something that I could be proud of. Like many of the projects that I had worked on, I did not have defined instructions for how to complete this project or exactly how it would be used, so I attempted to make the model as versatile as possible without sacrificing its usefulness. This lack of experience and structure made it difficult for me to feel sure that I had done this correctly. Furthermore, a lack of training in my classes and people at the company that I could ask for help made me feel at times as if I was not entirely competent enough to be relied on for this project, especially considering it was the first big project to work on by myself while being an intern at TuaTeam. Nevertheless, I knew this kind of responsibility would be something that I would face throughout my career, and it taught me to be more trusting in my judgment. When I finished the project, I was surprised but delighted that the only feedback I received from my boss was positive rather than critical, and I uploaded the model and presentation to the company's database for future use.

Literature Review

The research that I conducted during my time at TuaTeam allowed me to develop a foundation for understanding the scope of my industry and demonstrated to me the prevalence of

AI in finance. Through this exposure, I have decided to dedicate a significant amount of time to my future learning goals of learning about the incorporation of machine learning in investment analysis. According to a recent report published by the White House about the potential implications of AI in the workforce, machine learning is "a branch of computational statistics that focuses on designing algorithms that can automatically and iteratively build analytical models from new data." This subset gives AI its power to learn patterns and make decisions or predictions based on data.

One method used by advanced investors is algorithmic trading, which relies on mathematical models to execute trades at optimal times and high frequencies. While the development or purchase of a platform may be expensive, by removing the emotion from trading and the time-consuming process of analyzing all the desired factors, algorithmic traders can improve many factors in their investing, such as efficiency, risk management, and diversification, while monitoring the market 24/7. Another benefit to this strategy is that if supplied with a source of real-time data in large amounts, it can continuously execute decisions based on technical, fundamental, and investor sentiment analysis. Given the rapid growth of computing power due to Moore's Law and recent advancements in big data, these methods requiring copious amounts of extractions can now be used frequently by hedge funds and investment banks.

Predictive analytics is a type of algorithmic trading that can incorporate machine learning to build investment forecasting models, though it currently has a wide range of applications given its ability to statistically predict many events given historical data. Most commonly in banking, it is utilized to estimate credit risk and financial metrics. It is also increasingly being used in investment management to maximize the return and minimize the risk of a portfolio. Different types of predictive models can categorize and view data in different ways, such as by identifying outliers in data points, evaluating data over time, and clustering securities and their characteristics based on shared sets of behaviors. One of the advantages of combining machine learning with predictive analytics is the ability of AI tools to improve the accuracy of their forecasts over time by constantly adapting to new information.

While the previously mentioned techniques for incorporating machine learning into investing rely heavily on technical analysis for the most part, many firms hold investment strategies that are more dependent on fundamental analysis. This is the analysis of a security's value based on market conditions, events, and financial statement metrics of profitability among other things. Artificial intelligence can be used to efficiently update models based on financial statement analysis and events to complement the qualitative analysis conducted by finance professionals. This feature has the potential to provide a significant advantage over investors who develop static models, as it is often true in forecasting a company's performance that the inputs into forecasting methods have nuanced and non-linear relationships with their outputs. For example, some industry professionals tend to remove the effects of financing structures from their valuation techniques by using measures such as EBITDA to simplify the comparison of earnings among competitors. While it is more useful to focus on operating activities in creating a model, there have been multiple cases of managers of a company making decisions that are not aligned with the values of the shareholders based on the equity/debt financing situation of a company. Machine learning techniques can be used to determine an appropriate weight for such factors and include them in the model's output.

Another use for machine learning that has seen increasing areas of development and focus in the last decade is natural language processing for sentiment analytics. Sentiment

analytics is the process of extracting and classifying subjective information from text. There are two keys behind the use of this tool in gaining investment insight: analysis of public sentiment and management sentiment. Sources such as the news, analyst reports, and social media contain vast amounts of data that have a significant influence on the prices of securities relative to their intrinsic value. Information that is misinterpreted by the public drives market inefficiencies and can allow investors to anticipate price movements. Furthermore, the extraction of information from earnings calls can give an investor an edge in putting together an accurate picture of a company's strategy and outlook. Executives who speak on these earnings calls have information about the company that is not available to the public and would have a material effect on analyst/investor forecasts. AI has been proven to have the capability of identifying the tone and meanings of words in different contexts to provide a more holistic view of how investors and employees view different securities.

Recognizing the prevalence of AI in finance, particularly in algorithmic trading, predictive analytics, and sentiment analytics through natural language processing, has inspired my commitment to furthering my expertise in this dynamic field. The potential of machine learning to enhance decision-making, risk management, and market insights is evident, with applications ranging from technical analysis to fundamental analysis. As the financial landscape continues to evolve, the integration of AI technologies proves to be a crucial driver of efficiency, accuracy, and adaptability, shaping the future of investment strategies and portfolio management.

Conclusion

My role at TuaTeam gave me a unique perspective on the importance of intermediaries and consultants in connecting businesses with opportunities. The research that our team did allowed businesses to pursue opportunities to develop groundbreaking technologies and engage in culturally significant events for the betterment of communities in Spain and surrounding countries. My experience also showed me the important role that artificial intelligence will play in the future of business. There is almost an unlimited number of tasks and processes that can be improved or automated by AI. I experienced this firsthand with the use of Beautiful.ai. This software allowed me to quickly create high-quality presentations. Beautiful.ai gives users the ability to collaborate on and present presentations virtually and seamlessly. Furthermore, by utilizing the design and content generation features of the program, the presentations I created with my team communicated our messages more effectively.

The work environment that I found myself in was very different than what I expected before beginning my internship, but I think that this was beneficial in broadening my horizons past my expectations from my classroom experience and previous internships I've held in finance. I was also very fortunate to have intelligent and hard-working coworkers from diverse cultural backgrounds that I could learn from. I also had the opportunity to adapt to the many cultural differences that exist between the United States and Spain, from the longer hours and siestas that many workplaces adhere to in Spain to the more nuanced differences in hierarchy and work relationships. Furthermore, I learned valuable skills in communication through my endeavors to understand and use the native language.

Most importantly, my internship gave me exposure to acquisitions and investments in real-world alternatives. It gave me the chance to see the valuation of a business from the perspective of a company in the process of an acquisition. Utilizing the skills of analyzing the competitive environment of a company as well as the strengths in its core competencies and

potential weaknesses in its management and financial structure will be extremely useful for me in my future career in investments and financial analysis. Some of our clients also had specific needs in investing that could not be suited by traditional investments. Economic circumstances occasionally arise in which the negative correlation between equity and debt securities cannot be relied upon to provide investors with the level of diversification necessary to reduce their overall risk. For investors with longer time horizons, investments in private equity and real estate have the potential to provide enhanced returns and greater stability during periods of market volatility. I recently accepted a role at a wealth management firm where I will be analyzing portfolios of stocks and bonds, as well as modeling commercial real estate investments in Northwest Arkansas and the Midwest. I am glad to have had this opportunity to explore this field early in my career and to be able to demonstrate the skills I have developed thus far as I continue to learn.

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