# Louis Vuitton – Non sellables Replenishment process

Context

During 8 months, I had the opportunity to work at Louis Vuitton as part-time consultant during 8 months starting Nov 2020 to Jun 2021, as part of a team of 8 at Columbia University. I worked on Louis Vuitton’s non-sellables replenishment Process in order to increase the monitoring power of fragrance samples and packages. In the team, I was selected to be the worked among a team of 8. I was elected the technical leader, and especially focused on the fragrance samples part.

Problem Statement

Several solutions have already been explored by LV, but non-sellables replenishment remains a highly complex issue. Our team approached the problem without leveraging past solutions and built a new innovative solution that we are confident in assisting LV in improving their non-sellables replenishment process.

Solution

For this project, we initially focused on understanding the current replenishment process of non-sellables and the current procedures used in LV. We then gathered historical data provided by LV and developed our preliminary solutions. Based on our insights and understanding of their business problem, we divided our project into two focuses: how to estimate the daily usage of non-sellables and how to monitor this usage effectively for the supply chain.

To validate our solution, we visited two LV stores in New York, discussed with supply chain and retail managers, and distributed surveys to stores of different sizes to gather feedback from stakeholders. An end-to-end proposal that includes dashboards, in-store counter app, and automated notification email tool was finalized and presented. We demoed the usage and inventory calculation through data simulation in Python and Excel.

For final implementation, we migrated our calculation to dashboard and iteratively

developed final deliverables. We conducted frequent meetings with LV to determine the KPI’s and optimize the design of the dashboards and notification system. Moreover, we analyzed the business benefits and potential cost of our solution, and presented the final solution with key management and received positive feedback.

Read more

For this project, we signe a NDA **to prevent business confidential information from becoming public knowledge**.

Fresh Direct

Context

During 8 months, I had the opportunity to work at Fresh-Direct as part-time consultant starting Nov 2020 to Jun 2021, among of 8 students at Columbia University. I worked on analyzing its receiving processing and identifying the root causes of its receiving inacurracies. Following this, Fresh Direct asked us to optimize its inbound process by providing solutions to reduce the number of receiving inaccuracies by at least 10%. For this project, I was mainly charged with extracting useful business insights from the data and charged with the development of a power BI dashboard to present the relevant KPI’s to the FD Team.

# Problem Statement

Receiving inaccuracies have resulted in two consequences. Firstly, FD will incur losses through the dollars scrapped. Secondly, receiving inaccuracies may cause lesser quantities of goods to be received leading to customer shortages. If the errors go unidentified or are identified too late in the process, customers'

demands may not get fulfilled. This impairs customers’ shopping experience on FD and consequently tarnishes FD’s reputation as a reliable supermarket chain.

Description

The first stage of the project was understanding the problem definition; the

second stage was data exploration and analysis; the third stage consisted of recommendation building; the final stage was building and providing Fresh Direct with deliverables.

At first, we established an in-depth understanding of the receiving

and inbound process to analyze potential areas for accuracy improvements.

In the data exploration and analysis stage, I gathered relevant data on orders, scrapping,and receiving processes. Then I analyzed this data by utilizing statistical analysis, and comparative analysis methods to identify patterns and the main causes of receiving errors.

Based on our findings, I was responsible for developing a Power BI Dashboard to provide a real-time platform that FD can use for a long period to better track the overall performance of their receiving process.

United Nations

Context

I was raised in Gabon where I experience political instability in 2009, and this experience really urged me to go beyond simple awareness and forged the person I am today.

This is why, in summer 2021, I interned at the United Nations as a full-time unpaid data scientist, in the department of Political and Peacebuilding Affaires & Department of Peace Operations

Problem Statement

**For the United Nations, a**ccess to reliable and timely data for crisis response and decision making is vital.

Today, UN have deployed 40 missions around the globe which daily report to the headquarters using separate secured channels. These reports are confidential, human-written and compile a dense amount of information of the on-the-ground political news feed. However, because these reports are confidential, data sharing within the peacekeeping system is manual and decentralized.

To better utilize these rich and highly valuable reports and to help move the A4P agenda forward by enabling evidence-based decision making in peacekeeping, I was tasked with brainstorming and building a prototype to identify underlying determinants of conflicts in these reports.

Description

**Leveraging all the data and reports already internally available across the UN departments would already significantly increase crisis time-response and improve the coherence of decisions made across missions, as it would provide decision makers with all the accurate updated information from the UN.**

This task required me to use Data Science skills as Web Scraping to retrieve all the open-source and internal data sources, Computer Vision to extract all the information in the PDF version of the reports, Natural Language Processing skills to extract key features from text and Machine Learning prediction techniques to predict the outbreak of conflicts.

From these conclusions and after discussions with my manager and presentations of the project to my team, I decided to develop a system I named the “AI-based risk alert system for the Safety, Security, and Protection of Civilians”, whose goal is to provide decision markers with a logical procedure for analyzing risks within scenarios, framing, and making decisions. To develop this prototype, the first step was to build an aggregator for all UN data to gather all documents already accessible internally by the UN across the different departments tackling a certain conflict or mission, then extract key information to present to help the decision maker go through all these documents. At this stage, I started the prototype implementation.

**Results :**

The development of an AI-based risk alert system for the Safety, Security and Protection of Civilians was highly supported by all my team. My manager therefore supported me in applying for the Extra-Budgetary fundings campaigns of United Nations which aim at filling the financial gap to assure adequate funding of activities critical for successful conflict prevention, peacemaking, electoral, and peacebuilding efforts. After several rounds of reviews by the administration, my application got approved and I unlocked $181,000 of fundings to the IMU team to pursue this project in 2022.