SAFFRON
RETAILORS LTD

PROPOSAL

BUSINESS

Prepared For :

Executive Directors

Prepared by

Andrew Da Costa

Binal Patel

ABOUT US

The Board of Directors at Saffron Retailers Ltd. is comprised of close-knit entrepreneurs, investors and life-long friends that have poured a substantial amount of their money in hopes of becoming a prominent player in the Indian grocer market. They have made their vision clear and are willing to invest in supplementary insights and tools that could provide opportunities for business growth. Various members of the organization have recently reported a stagnancy or declines in operations; therefore, it would be in the best interest of the board at Saffron Retailers to engage in data analysis. The purpose of these analyses would be to identify the key factors impacting profitability and formulate data-driven strategies to improve sales and customer satisfaction.

GOALS & OBJECTIVE

OBJECTIVE 1

To address stagnant or declining profits at stores across Calgary, this project aims to conduct a comprehensive analysis of sales data across the city, which will uncover valuable insights and opportunities for increasing sales and profitability. The analysis will explore the performance of individual products, as well as the performance of various product departments in Saffron stores. This will be beneficial to the organization as it will highlight which products are substantially contributing to profits. It will also reveal which products are not performing well, providing context on whether they should be ordered in smaller quantities to make room for higher selling products, or removed from shelves completely.

OBJECTIVE 2

The analysis will also provide insights into how the stores in regions across Calgary are performing. These insights will be beneficial to the organization because they will reveal the weaker performing stores, and solutions such as eliminating those stores to increase customer traffic to popular locations, the potential expansion of a store, or having certain stores host specialized product types, are possible recommendations for the board of directors. The intended result of investing into this analysis is for the board at Saffron to truly understand the advantage of analyzing data to solve business problems and incorporate data fluency into their organization at all levels.

CRITICAL PROCESS

Inventory management: By analyzing historical sales trends, we can optimize stock levels, reduce stockouts and minimize excess inventory. Inventory management is a crucial aspect of strong business performance, as it ensures shelves are consistently stocked with the products customers are looking to purchase. Controlling warehouse inventory is important as there must be an appropriate amount of stock to refill shelves. Having an excess of stock that may expire or spoil without ever reaching a shelf would be considered a negative impact on the economics of the business. It will be beneficial to understand flows of inventory in and out of stores, and reduce the money spent on excessive stock.

Product offerings optimization: Through detailed analysis of product performance, we can tailor the types of product offerings to customer preferences, ultimately boosting sales. It would be beneficial for the business to identify which products are selling well, but more importantly those that are not selling well. These products may not be worth physically placing on the shelves when a better selling product could be placed there instead. The company may also save money by eliminating these low selling products from their supply chain completely

Regional Expansion: Comparison of sales performance across regions in Calgary will help us identify which stores are not performing well and provide insights on how sales could be increased at these locations. Increased advertising for the store in that region or converting a store into a specialized location such as a butcher or organic food store, may be growth opportunities. The business may also benefit from selling a store, and redistributing its assets across the better performing stores, to increase market cap. Another potential insight may uncover that store are operating close to their maximum capacity, and if so, the business may investigate expanding those stores, or building a new store to relieve some of that pressure. This could provide an opportunity to attract more customers to two different stores if placed strategically within the city.

RANKED ORDER OF ANALYSIS ACTIVITIES:

Product Performance Analysis: : Identify and address underperforming products or categories to optimize product offerings. Performing an analysis on the replacement of weaker performing products may be highly impactful and easy to implement when compared to other growth opportunities.

Sales Forecasting Model: Develop accurate predictive models for the next six months to guide resource allocation and strategic planning. This analysis is based on a combination of results from product performance, inventory management and regional sales studies. Using various practical scenarios, predictive models can be developed to determine any potential growth opportunities in the business. The feasibility to implement a solution based on a predictive model would need a cost to implement vs. return analysis before the board of directors would approve it, but the impacts could be substantial. Regardless, it is highly dependent on the type of changes being predicted.

Seasonality Patterns: Uncover seasonal trends to enhance inventory management and meet customer demand effectively.This process is similar to the above, but it is based on seasonality. This is important to optimize the products on shelves close to holidays and certain times of the year, as sales will increase because customers are looking for specific items

Regional Sales Comparison: Analyze sales data across regions to identify areas for growth and expansion. It would be very impactful to have information on the sales and performance of stores across the city, as this data contributes to insights on the highest levels of the business. These changes and analyses would have a longer timeframe to implement and larger investments of money, but the return on investment could be substantially higher as well**.**

JUSTIFICATIONS AND DECISIONS

Priorities are chosen based on their potential impacts on profitability and feasibility for implementation within the project's timeline. Analyzing the products sold in our stores is a justifiable decision as they are ultimately what is generating money for the business. Investigating regional sales data can also be considered a justifiable action as it is important for the business to understand the sales data across the entire city and implement appropriate changes to increase market potential. Inventory management can incorporate knowledge of product performance and regional performance to optimize sales outputs and capitalize on customer response, while reducing the costs associated with excessive stock that could potentially spoil, and poorly managed warehouse logistics

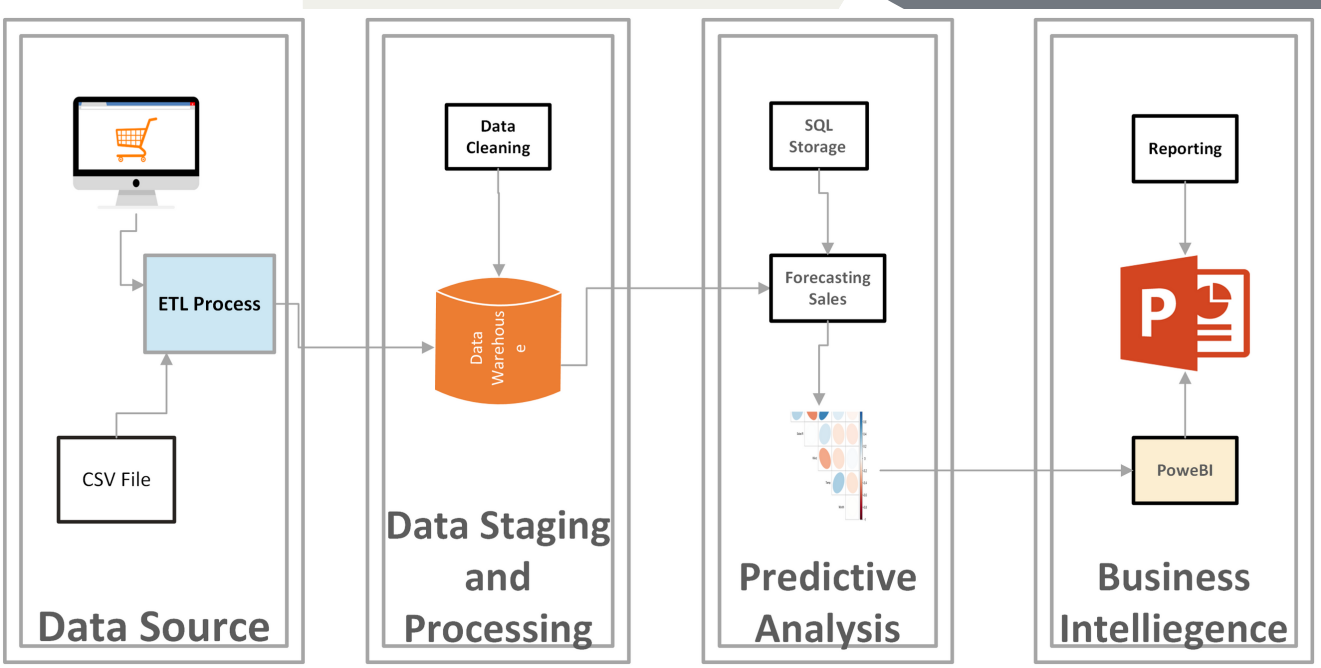
Predictive modelling is an important process for this analysis as it will provide the board of directors with insight as to what a potential future of sales may look like if they were to implement a certain set of modelled changes. It would be in the board of directors' best interest to implement post-change monitoring to observe if there are positive or negative trends based on real time data.

ARCHITECTURAL OVERVIEW AND ORGANIZATIONAL IMPACT

The data analysis process will involve data collection, preprocessing, exploratory analysis, predictive modeling and visualization. The data collection was already performed, so having access to the company's historical records is important, as these are the sources of data that can be used for analysis. Preprocessing includes gathering all the data sources required for the analysis and performing the ETL process to create a data warehouse. After accessing the data from the warehouse, exploratory analysis can be performed to better understand the data before making decisions on predictive analytics.

Modeling and forecasting the data representing scenarios that implement practical business solutions impacting growth, would be the next step in the process. Tools such as reporting, OLAP and data mining are used, and the results of the analysis are passed to visualization software. Representing the findings of the project in a visual format is important, and the best way to convince the board of directors that a growth opportunity exists. By following this architectural overview, the business can start incorporating data fluency practices into all levels of business, so that performing future analyses will become more economical and efficient, and new insights can easily be uncovered. The transition from the current state of business to a data driven future state will empower Saffron Retailers with actionable insights, leading to optimized operations, improved customer experience, and a stronger market presence.

ARCHITECTURAL DIAGRAM



RESOURCES AND TOOLS TO BE USED

Resources

Resources: It is important to understand the resources available to successfully perform an insightful analysis. Training and educating the data analysts, district managers and board of directors on the retail/grocer industry is crucial. This process aims to gain profound comprehension of the company's operational mechanisms and will allow the successful implementation of any required changes. Updated training programs on data analysis techniques, product portfolios, and software packages, will ensure the business' employees are constantly growing and adjusting to fluctuations in the industry. Providing historical company information, policies and documentation allows employees to be well informed and updated on the business. Additionally, there is a focus on hiring and fostering individuals possessing the skill sets required for scrutinizing intended results. These skilled personnel must consistently educate and update themselves as data analytics evolves. The availability of high-caliber data is crucial in achieving the desired outcomes.

Tools

Data collection and cleaning involve working with various file formats such as CSV, TXT and Excel. After these files are collected Excel, SQL, and SSIS (Visual Studio) are utilized to perform the ETL processes required to obtain the information appropriate for exploratory and predictive data analysis. Databases such SSMS are used to store the refined data. For visualization purposes, tools such as PowerBI and Tableau are employed to create insightful visual representations of the proposed solutions. Python serves as the programming language of choice for conducting these analyses.

APPROXIMATE COST

Assessing Labor Expenditure:
The roles and proficiencies essential for this analysis, encompasses data analysts, business analysts, data scientists, and a project manager. The labor costs associated with this project would include the hourly wages of the members on the analysis team over the course of the four months they would have to work on the project. The costs to have a data scientist and a project manager are higher than for analysts due to the higher level of expertise and skills required. Since the analysis is accessing company data, the analysis can only be performed on site during company hours, as the company does not want to pay overtime to complete this analysis.

Enumerate Resource Prerequisites:
The business should have the appropriate data collection tools to obtain transactional data after each customer purchase. These tools are implemented at the registers in all stores, and cost to maintain these is important. Supporting the effective use of data collection provides future opportunities for analysis on business growth. After collecting transactional data, the data must be stored, these large databases storing data come as an expense for the organization. The company should also provide at least three computers that have the computational power to perform the required analysis and prepare a convincing visual report for the board of directors.

Compute Expenses for Software and Tools:
Saffron Retailers would need to invest in software licenses that provide data collection, analysis, visualization, and reporting functionality. The yearly subscriptions or programs required would include Microsoft 365, Visio, SMSS, and PowerBI. There would also be costs associated with the maintaining the computer software that the entire business operates on during normal operational hours, such as Point of Sale technologies

Appraise Infrastructure Expenditures:
With respect to storing data and accessing it on cloud platforms, there will be costs associated with secure data retention, computational capabilities of the cloud, and data transmission from the cloud to software for further analysis. The cloud should store data in an organized structure, such that specific information such as product performance or regional sales data can be easily accessed in a suitable format. Saffron should invest appropriately into cloud software, as fostering a data fluent organization is essential for business growth..

DATA OVERVIEW AND APPLICABILITY

The historical information extracted from Saffron databases will establish the basis for our analysis. The focus is on structured data, which is well-suited for supervised modeling. The transactional data is generated at the point of sale, and there are no other sources of data such as surveys. The historical data collected will reference individual transactions that have information pertaining to the geolocation of the store/region, product descriptive data such as the type of product being sold, the timeline for these purchases, sales data for each transaction, and customer data such as gender and payment type. This information will be included in multiple files that can be related by the transaction number. This data will undergo purification and preprocessing with clever use of SSIS and SSMS, before being harnessed to construct predictive models. Analyses such as time-series models can be used to predict the sales of Saffron stores if appropriate business solutions were implemented. By performing predictive analytics, we aim to detect patterns, recognize trends, and offer insights to develop business solutions that will increase the market presence of Saffron Retailers. To ensure privacy, client identities and payment particulars have been anonymized.

MEET THE TEAM

ANDREW DA COSTA

"I am a District Manager and Data Analyst for Saffron Retailers. I am naturally drawn to solving complicated problems. The issues surrounding Saffron's decline in sales is a perfect opportunity for myself to apply advanced analytical techniques and further understand the realm of retail management. Over my career I have established myself as an employee who will go above and beyond to efficiently and effectively solve problems, all while maintaining a positive attitude and enjoyable work environment with my colleagues. Collaboration is important to me, and is the most effective way to figure out the most complicated situations. I am looking forward to working with Saffron, and watching this company grow before my eyes"

BINAL PATEL

'"I am a dedicated District Manager/Business Analyst who pays close attention to details and loves solving problems. Right now, I'm working on figuring out why sales have gone down at Saffron Retailors. I enjoy being precise and careful, which helps me find smart solutions. I work best when I'm part of a team and believe that working together brings the best results.
Outside of work, baking helps me relax and get creative. I'm good at handling fast-paced situations, which helps me tackle challenges and get things done efficiently. I really want to help Saffron Retailors grow and succeed by making positive changes and getting great results."