

1

INTRODUCTION

1.1. STUDY PURPOSE

The purpose of this study involves conducting a sales analysis for a manufacturing company located in Mexico, specifically for those products with the highest demand during the past 3.5 years, and forecasting these products for 2023.

1.2. BACKDROP

An important component of making critical decisions is the ability to accurately predict future performance; this is essential not only for the sales function of a business but also for all the process before making a sale. Companies might not think about studying sales data as a priority, but the information one can gather from it can be invaluable to the business and not seeing the importance of it could end in inaccurate forecasting methods based on intuition, which can make companies end up having poor visibility into projected sales. Mahalingam (2020) mentioned that “when a company constantly misses its sales forecast it can have a negative impact on its valuation over the long term” and that “exceeding your forecasts isn’t good news either”; this is because it could lead to several missed opportunities if one is not able to predict how much revenue one will generate accurately. The lack of a basic understanding of future sales makes it impossible to devote resources, hire qualified staff, increase quotas, or manage costs. One can use sales forecasting to make informed, impactful business decisions using the information one gathers.

As mentioned previously, sales forecast is needed not only for more than only knowing how much one is expecting to sale but also for:

- Creating a budget and financial plan: A business makes its money through sales revenue, and if one cannot estimate how much sales revenue one will generate in the coming year, one will likely

under- or over-budget. The chief financial officer (CFO) and financial team can plan accordingly based on a detailed sales forecast. The efficiency of everything depends on sound financial planning. By planning the spendings carefully, one can ensure that one is doing it wisely.

- **Managing sales teams and goals:** The sales team's performance can also be improved by making sound sales forecasts. The sales team can create better quotas and focus their energy more effectively if one knows what one expects for the next 12 months. One can also ensure proper staffing levels are met and maintained.
- **Devising marketing strategies:** In addition to helping the sales team set targets and quotas, a sales forecast can also benefit the marketing efforts. One can identify underperforming products with a detailed sales forecast. Using this information, the marketing team will know where to focus their energy and whether to increase or decrease their efforts to promote the product. One can also use marketing efforts at the macro level to boost sales if projections indicate lower sales ahead.
- **Maintaining consistent pricing levels:** The sales might be lower year over year if you have a poorly constructed sales forecast. As a result, one may reduce the prices to compensate. A fully realized sales forecast ensures one is deciding based on actual projections and not just gut feelings and panic and can help one maintain consistent and profitable pricing for the products and services.
- **Maintaining proper inventory levels:** Without a sales forecast, one could be wasting thousands of dollars carrying excess inventory the company does not need, or one could find the company out of stock on key items when demand is booming, leaving money on the table. If one has a data-driven idea of how the sales should develop in the future, it is much easier to make sure one keeps what one need in stock and never run out of an item when it is in demand.

These are only some of the benefits of using a proper sales forecast.

1.3. STUDY RATIONALE

The company that the researcher will be working with has based their sales until today on a combination between intuition and trusting the word of the clients as for what they will purchase in the future. Now, the problem with this "forecasting" method is that the customers not always know exactly what they will need, that the company is planning for the

short term and this can end up with either shortage of product or over inventory of it, and that they are not having any information of the growth they are having or if they are having any at all; in other words, there is no control over what is needed, what is being produced, and what is being sold.

Some of the benefits and reasons for this study include:

- **Make strategy decisions:** In addition to staffing and inventory, sales forecasts are essential for making informed decisions about new products and marketing initiatives. The company can avoid or alleviate potential sales issues with sales forecasts by giving their managers and representatives time to spot potential issues.
- **Set better goals:** Having a realistic sales forecast can help sales managers set realistic goals. Throughout the year, sales forecasts are used to determine the direction the sales team should take in addition to establishing the company's vision.
- **Accurate budgeting:** In order for the company's financial team to establish income plans and establish profit margins, forecasting is critical. Furthermore, they will need it to make long-term arguments for additional resources or materials for production teams.
- **Better hiring and resource planning:** Based on the results of the forecast, the company will be able to take the decision of hire more people in other to fulfil the demand or refocus their efforts on bringing in more business to increase the demand.

The company the researcher will be working on is in desperate need of a sales analysis and forecast.

1.4. CASE STUDY BACKGROUND AND PROBLEM STATEMENT

The company that the researcher will work for this case study is a Mexican company that started as a family business on 1998, dedicated to the design and manufacture of polyethylene terephthalate (PET) containers, polyethylene (PHDE), and coextruded containers, as well as polyethylene and polypropylene safety caps with and without liner; after more than 20 years in the market and having grown to a national company, they still have some of the family company structure. They do not have any sales analysis currently, and this can translate into different problems such as excess or lack of inventory, high storage costs, and

production planning problems that can cause production costs under time pressure, but this report focuses today on the production planning process and sales forecasting. At the moment, the process consists of the sales team to contact customers and ask for and expectation of needs and produced based on it; of course, this is not the best way to approach the production plan because information is not reliable and, as a consequence, they are having problems of shortage or over inventory as much of the time.

1.5. RESEARCH AIM & OBJECTIVES

The aim of this research is structured as follows:

To calculate the sales forecast for 2023 according to the sales history data shared by the company for the past 3.5 years.

The researcher is using 3.5 years of data because the company was only able to collect data from 2019 to date. The information was recovered at the beginning of August, leading the researcher to have partial information for the current year, thus the 0.5 years.

Based on this aim, the researcher has the following objectives:

- **Objective 1:** Find the 10 products with the highest sales during the past 3.5 years.
- **Objective 2:** Understand if the top 10 products have a significant impact on the total sales.
- **Objective 3:** Analyse the sales fluctuations for the top 10 products during the past 3.5 years.
- **Objective 4:** Forecast the sales of the top 10 products for 2023, based on the historical data.

1.6. DISSERTATION STRUCTURE

The remainder of this dissertation are organized as follows:

- **Literature Review.** This chapter examines the previous work in areas relevant to the topic the researcher is studying, as well as the literature that has been produced, such as books and academic journals. This section is divided in four sub-sections: introductions, sales analysis, significance test, and sales forecasting.

- **Methodology and Method.** This section serves two purposes: first is to find different approaches such as philosophical and ontological are identifies and selected and second is to demonstrate, critique, and justify the actual methods that we used in our research. This chapter is divided into seven sections: introduction to the chapter, philosophical assumptions, research questions, validity and reliability, data selection and collection, ethics and bias, and limitations.
- **Results and Discussion.** An analysis and discussion of the findings of the primary investigation is provided in this chapter. This chapter is divided in three sections: introduction, results, and summary. Results is also divided into nine parts: gather data, discover and assess data, clean and validate data, transform and enrich data, data analysis, products with the highest sales in the past 3.5 years, testing significance of the top 10 products, demand fluctuations analysis, and forecasting.
- **Conclusions.** All findings are discussed related to the main research question and objectives. This chapter is divided into six sections: introduction, general conclusions, research question conclusions (divided in the four objectives established by the researcher), recommendations, error and limitations, and recommendations for future study.
- **References and Appendices.** The reference list using the Harvard referencing method and any supporting documentation.