

Financial Analytics Report:

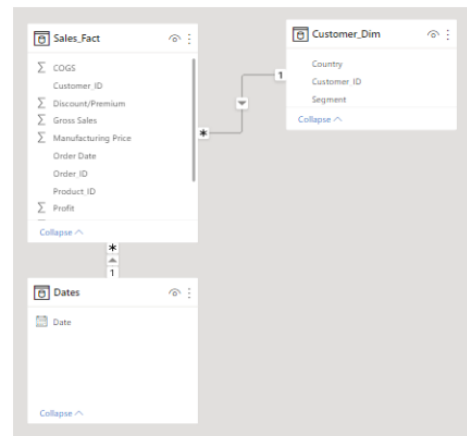
We will be playing the part of a new financial analyst for an aerospace manufacturing firm called Spaero Technology.

The data

The dataset is made up of fictional sales data from 2015 until 2021. It follows a star schema, which means it centers around a main table called a fact table and has other tables, called dimension tables, that organize related data. In this data model, the Sales_Fact table holds all transactional data for each sale made, and Customer_Dim contains some more of the customer information.

The data

- Sales data from 2015 - 2021
- Follows a "Star Schema"



Key performance indicators (KPIs)

The goal of financial analysis is to examine the financial performance of an asset or company to drive decision-making and set goals. Financial analysts use key performance indicators, or KPIs, to measure performance and are useful to keep track of goals. The KPI we choose will depend on the audience and the business goal. For example, a CEO might be interested in profit, whereas a sales manager might want to know about average revenue per customer.

Objectives and key results (OKRs)

Objectives and key results, or OKRs, is a popular goal-setting framework. Objectives are the main business goals and provide a focus for the framework. Key results specify the results of the objective and set benchmarks, and often, key results have a list of initiatives or tasks that need to get done to accomplish all of this. Within this

framework, there is ample opportunity to track KPIs and objectives at every level within a financial dashboard.

Profitability

To understand profitability, we need to know how to calculate net income. Net income is revenue minus expenses. Revenue is all the income earned by a company. Expenses are all the money the company paid during its operation. When net income is greater than zero, it's called profit. This is why net income and profit are often used interchangeably. When net income is less than zero, it's called a loss, and when net income is equal to zero, it's called break-even.

Profitability

Net Income

$$\text{Net Income} = \text{Revenue} - \text{Expenses}$$

- **Revenue** is income earned
- **Expenses** are money paid

Levels of profitability

- Net income > 0 = **profit**
- Net income < 0 = **loss**
- Net income = 0 = **break-even**

Profit Margin

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Revenue}}$$

- Commonly used in business
- Ratios are useful in comparisons because they ignore size

Profit Margin is a commonly used ratio in business. To find the profit margin, divide net income by revenue. Ratios are great because they normalize a statistic's size into metrics that can be easily compared. Revenue, expenses, net income, and profit margin are the beginning of financial measures and KPIs. There are literally an endless amount of KPIs, since they can be tailored by the analyst depending on what is needed.

Analytical Approach:

First we create a measure called net income by subtracting the total cost of goods sold (COGS) from the total revenue generated from sales. Then calculate the profit margin which is dividing the net income by revenue.

38.01%

Profit Margin

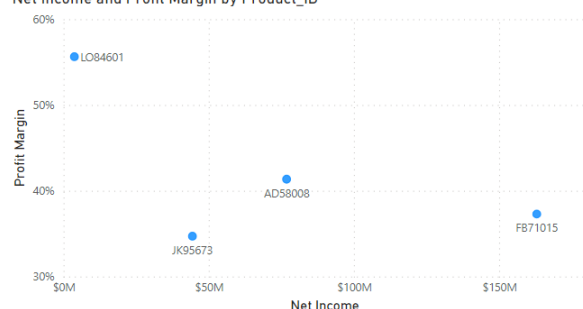
LO84601
55.63%
Profit Margin

AD58008
41.35%
Profit Margin

FB71015
37.29%
Profit Margin

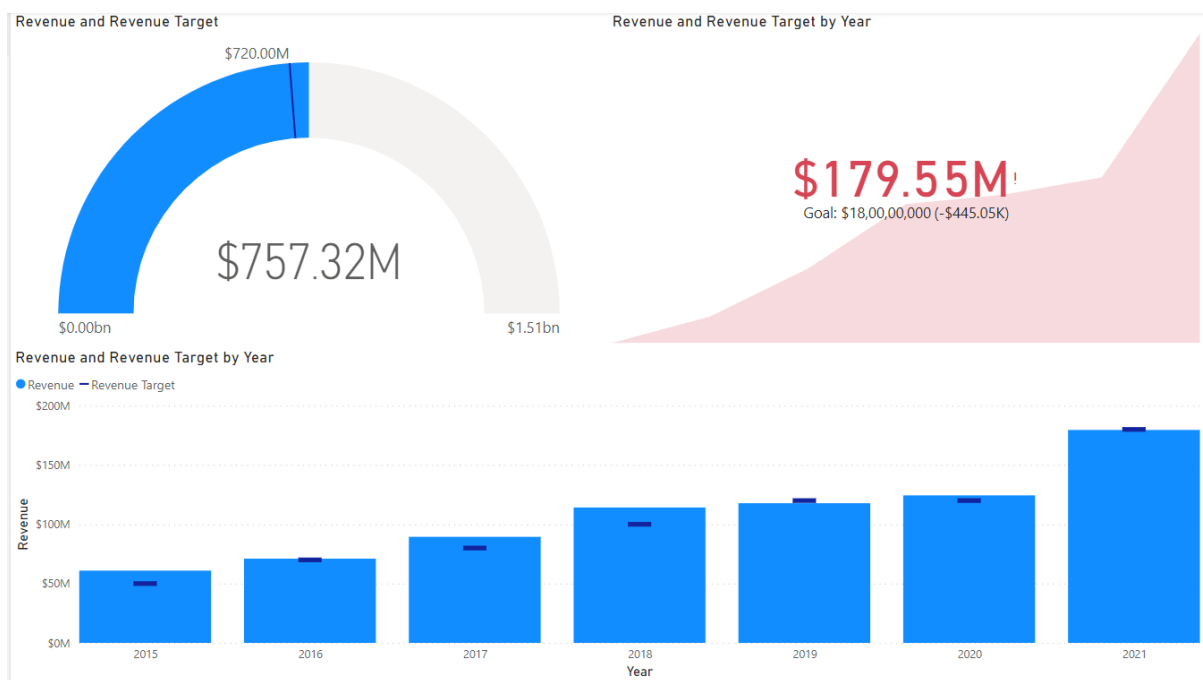
JK95673
34.71%
Profit Margin

Net Income and Profit Margin by Product_ID



FB71015 had the highest Net Income (\$16,29,62,236.41) and LO84601 had the highest Profit Margin (55.63%). LO84601 had the highest Profit Margin and was 60.30% higher than JK95673, which had the lowest Profit Margin at 34.71%. LO84601 had extremely high profit margin compared to other products. That could be a sign Spareo's sales are low because margin is too high. We should let the CFO know this right away.

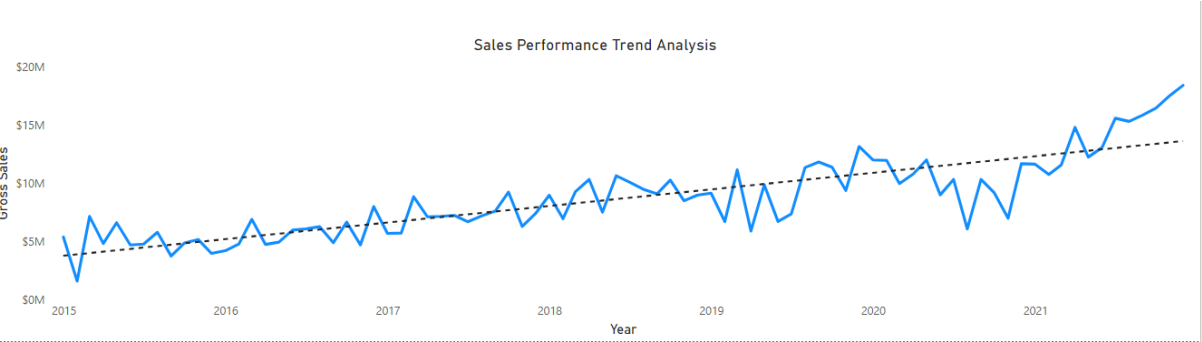
After we identified the LO84601 had the highest profit margin, the CFO wants to lower the price and sell more. We need to create a page to set the revenue goals.



1. **Revenue Performance Over Target:** By comparing the revenue for each year to its corresponding revenue target, we can assess the performance of the company over time. For instance, in 2021, the revenue slightly missed the target by \$445,048.21, whereas in 2019 and 2020, the revenue fell short of the targets by \$2,200,545.75 and exceeded the target by \$4,400,978.32, respectively. Analysing these variances can help identify trends and factors influencing revenue performance.
2. **Trend Analysis:** Examining the revenue trend over the years provides insights into the company's growth trajectory. For example, there was a significant increase in revenue from 2015 to 2019, with the revenue nearly doubling during this period. However, the growth rate slowed down in 2020 and 2021, with revenue increases being smaller compared to previous years. This trend analysis can help in forecasting future revenue growth and setting realistic targets.

Customer analytics:

Next task is to better understand the top 20 customers of Spaero.



Top 20 customers by sales	
Customer_ID	Gross Sales
C10090	\$1,15,89,522.00
C10063	\$1,14,85,765.00
C10033	\$1,06,25,540.00
C10040	\$1,04,58,254.00
C10057	\$1,04,51,693.00
C10060	\$1,04,28,687.00
C10069	\$1,01,21,912.00
C10058	\$98,72,619.00
C10005	\$95,97,333.00
C10030	\$94,14,533.00
C10012	\$93,73,846.00
C10056	\$93,49,676.00
C10050	\$93,38,566.00
C10048	\$92,98,070.00
C10023	\$92,73,492.00
C10013	\$90,43,884.00
C10039	\$89,62,707.00
C10091	\$88,28,481.00
C10037	\$87,16,792.00
C10036	\$86,34,304.00

Customer Distribution by Country Analysis: Australia Dominates, India Lags Behind"

This insight highlights the significant presence of customers from Australia compared to other countries, with India showing the least representation. It suggests potential opportunities for targeted marketing or expansion strategies in Australia, while also indicating areas for growth and improvement in engaging customers from countries like India.

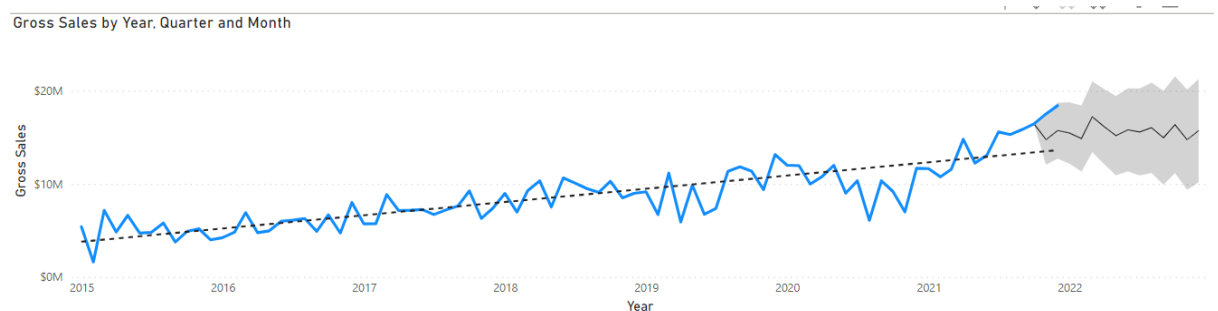
Customer Distribution by Gross sales Analysis:

The 80th percentile for gross sales by customer is \$7.91M. So at and above this point customers are in top 20% of gross sales. Implement personalized engagement strategies to strengthen relationships with these high-value customers. This could involve personalized offers, exclusive discounts, dedicated account management, or personalized communications based on their preferences and past interactions.

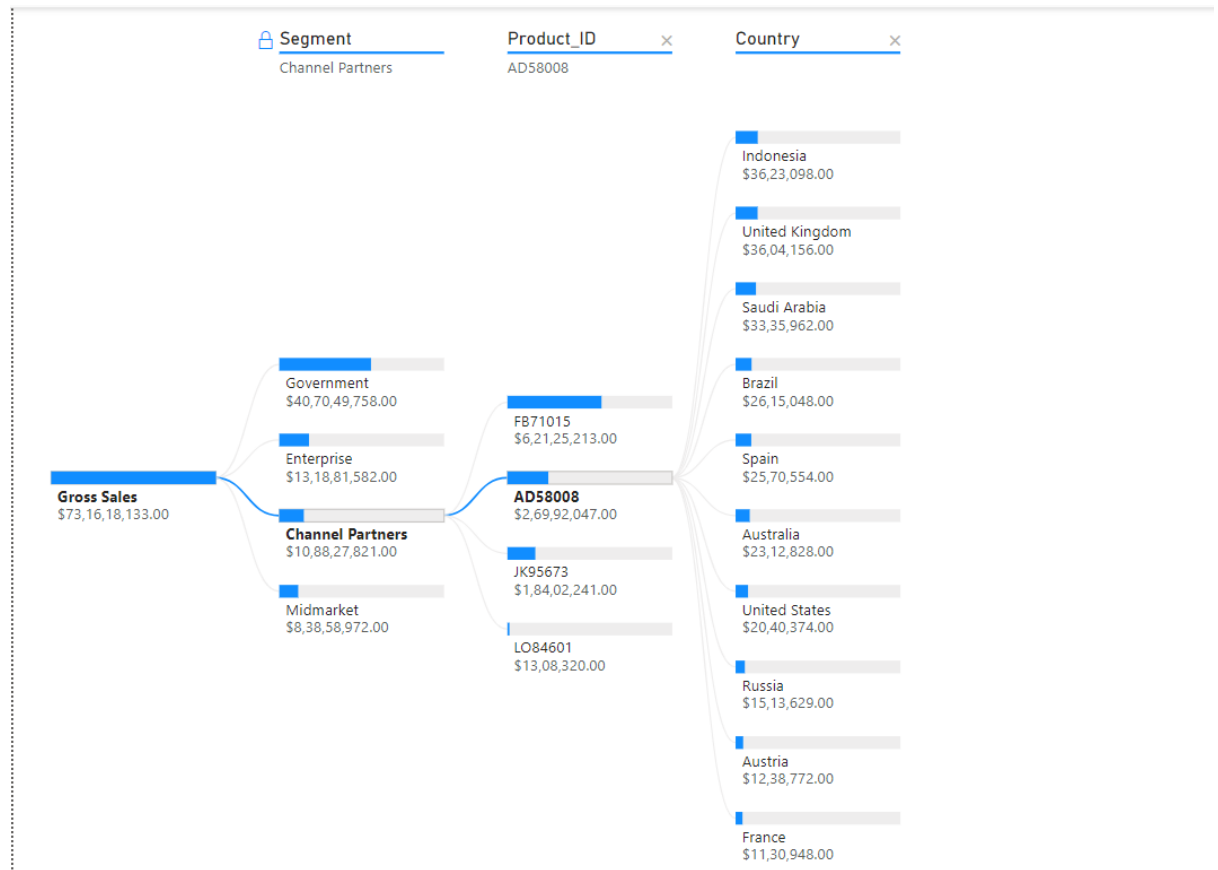
Sales Trend Analysis:

Gross sales exhibited a significant upward trend, witnessing a remarkable 240.41% increase from January 2015 to December 2021. This consistent growth trajectory reflects the effectiveness of business strategies and market demand over the years. Notably, starting from February 2021, gross sales experienced accelerated growth, surging by 71.04% within a span of 10 months. During its steepest incline between February 2021 and December 2021, gross sales witnessed a substantial jump from \$1,07,60,890.00 to \$1,84,04,925.00. This steep incline underscores a rapid increase in market demand, product popularity, or effective sales strategies during this period.

We need to add a 12-month forecast at 95% confidence interval to the above line chart. Spaero's sales has a seasonality of 12 months. We need to adjust the forecast for this. Customers have 60 days to return or cancel the orders. Because of this return policy, the CFO wants to ignore the last 2 months of reporting with the forecast and extend the forecast range to 14 months.



Next task is to explore more data about gross sales in a summarized form. Instead of looking to graph for every single segment, customer and country, the company needs a simple way to explore it. For this we will be using the decomposition tree.



1. Segment Analysis:

- The "Government" segment appears to contribute significantly to gross sales, with substantial sales figures across various countries.
- "Enterprise" and "Channel Partners" segments also play a significant role in contributing to gross sales, indicating diverse customer segments and distribution channels.

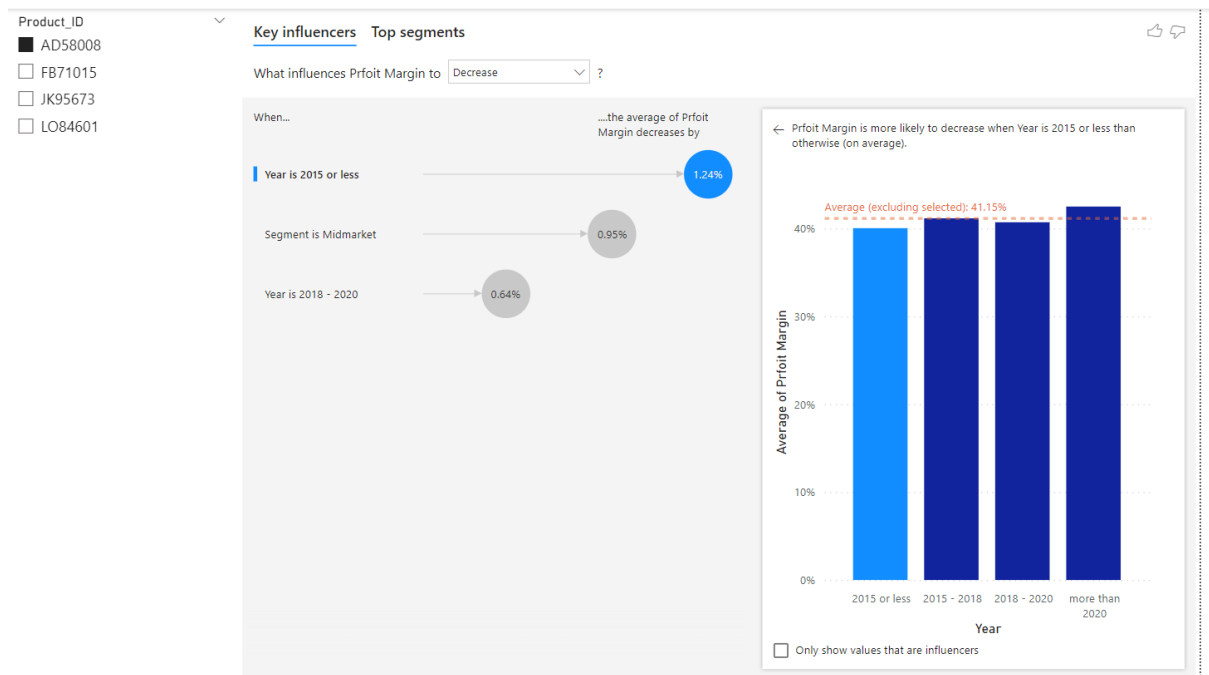
2. Product ID Analysis:

- Product ID "FB71015" dominates the sales, with substantial sales figures across different segments and countries. This product seems to be the top-selling item contributing the most to gross sales.
- Other product IDs, such as "AD58008" and "JK95673," also contribute to gross sales, although to a lesser extent compared to "FB71015."

3. Country Analysis:

- The United Kingdom appears to be a significant market for gross sales, with substantial sales figures across various segments and product IDs.
- Other countries like Turkey, Sweden, Switzerland, and Poland also contribute significantly to gross sales, indicating a diversified geographical presence.
- Emerging markets like Brazil, India, and Indonesia also show notable sales figures, suggesting potential growth opportunities in these regions.
- Countries such as Australia, Canada, and the United States, known for their strong economies, also contribute significantly to gross sales, reflecting a broad market presence.

The CFO wants to learn more about what is the driving profit margins for the company. They need something that explain the relationship between the profit margin and other factors. We will be using key influencers visual for this which explains the correlation between 2 or more variables.



Scenario analysis

Scenario analysis is a type of financial modeling that evaluates the performance of a dependent variable given certain factors determined by the analyst. Scenario analysis goes by a few different names, depending on the goals of the analysis. What-if analysis is commonly used to evaluate goals. For example, if a company

wants to know what the revenue would be given an increase in sales, a what-if analysis is perfect for this.

Forecasts are commonly used in scenario analysis because they predict or estimate a future outcome based on assumptions. They usually use historical data and some set of assumptions to inform predictions of the future, so scenario analysis can be used to find what the future could hold in a specific situation. There are many different ways, or methodologies, to create a forecast, but the basics are straight line, moving average, and regression analysis.

Straight Line Forecasting is the easiest forecasting methodology. This assumes the growth rate will remain constant for the next period. In scenario analysis, the growth rate can be changed to examine all the possible outcomes. Usually, analysts will use the last year's growth rate. Let's look at the formula. F_t is the forecast for the a time period. To calculate a straight-line forecast, simply take last time period's value, denoted as x_{t-1} , and multiply it by one plus the growth rate. For example, if 2021's revenue was \$100,000, and the growth rate was 2%, then the forecasted revenue for 2022 would be \$102,000. Because the growth rate remains constant, it looks like a straight line on a chart, which gives this methodology its name.

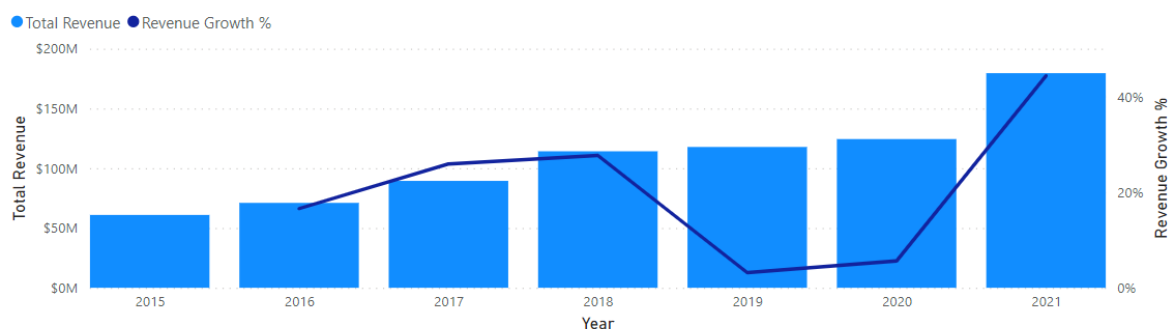
A growth rate is the same as finding the percent change. Find the difference between the end and start values and divide it by the start value. For example, to find the growth rate between 50 million in 2019 and 70 million in 2020, first find the difference between 70 million and 50 million; 20 million. Then divide that by the start period; 50 million. That returns zero point four, or a 40-percent growth rate.

Scenario forecasting:

we will be creating a straight-line forecast for units sold. We'll use two methods: first, by using last month's growth rate, and then with a what-if parameter. Create two measures called Total revenue and Total revenue for last year. Then we calculated $\text{Revenue growth \%} = \frac{(\text{Total Revenue} - \text{Total Revenue Last Year})}{\text{Total Revenue Last Year}}$

This formula calculates the percentage growth in revenue over a specific period by comparing the total revenue for the current period with the total revenue for the same period in the previous year.

Total Revenue and Revenue Growth % by Year

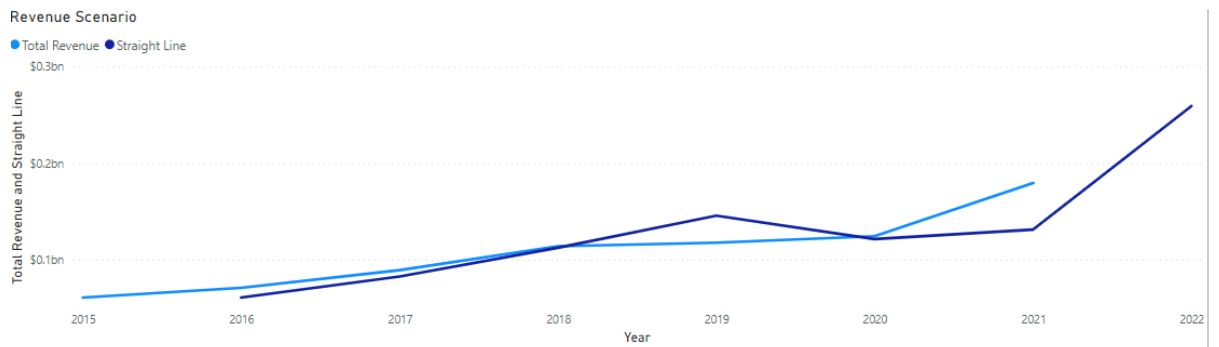


1. Total revenue has shown consistent growth over the years, steadily increasing from \$60,936,396.49 in 2015 to \$179,554,951.79 in 2021. This demonstrates the company's ability to generate increasing revenue over time.
2. While revenue growth % fluctuates annually, indicating variations in growth rates, the overall trend remains positive. Growth rates range from 3.17% in 2019 to 44.34% in 2021, reflecting fluctuations in business performance but with an overall upward trajectory.
3. There is a noticeable acceleration in revenue growth between 2017 and 2021. The growth rates during this period are particularly significant, with a substantial increase from 25.90% in 2017 to 44.34% in 2021. This suggests that the company experienced rapid expansion and increased market demand during these years.
4. The consistent growth in total revenue and varying growth rates indicate steady expansion and adaptation to market conditions. Despite fluctuations, the company has managed to maintain positive revenue growth, highlighting its resilience and ability to capitalize on opportunities.

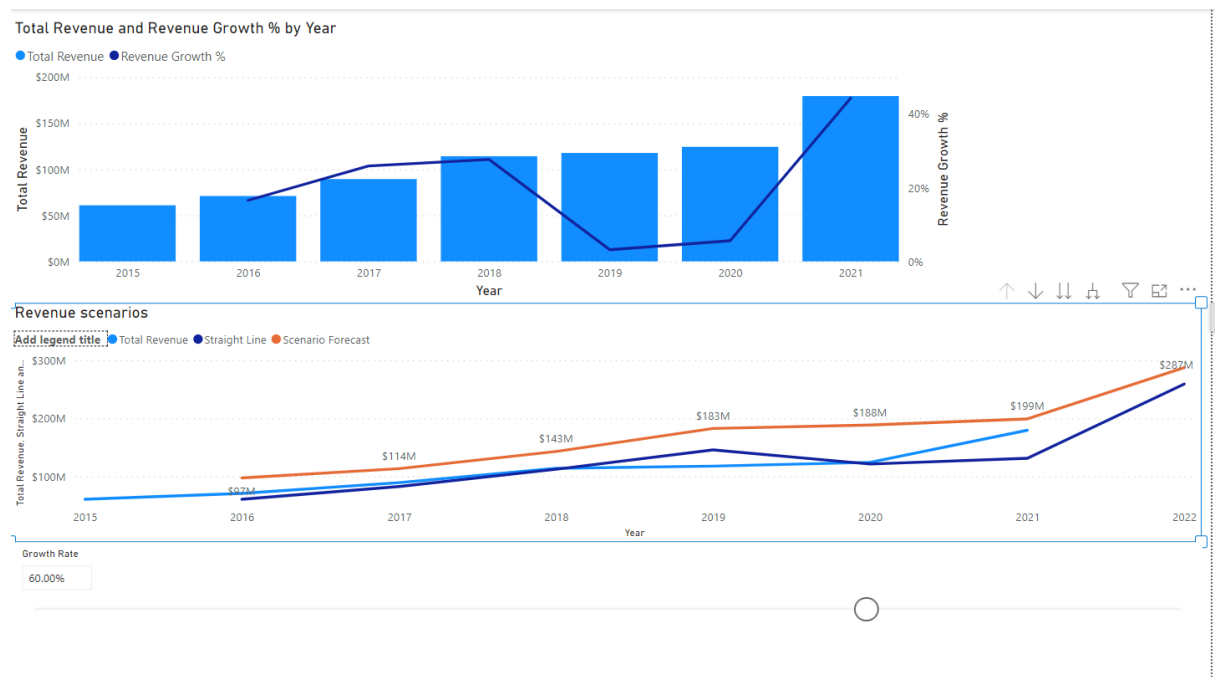
Now our task is to create straight line forecast. This method of forecasting assumes the same growth as that of last period. We will be creating 2 measure more.

Revenue Growth % Last Year: This measure calculates the percentage growth in revenue for the same period in the previous year. It provides insight into how much the revenue has increased or decreased compared to the corresponding period in the prior year. By utilizing the CALCULATE function with SAMEPERIODLASTYEAR, the measure isolates the revenue growth percentage for the previous year's period, enabling a direct comparison with the current year's performance.

Straight Line: This measure forecasts the total revenue for the current period using a straight-line forecasting method based on the revenue growth percentage from the previous year. It estimates the total revenue for the current period by applying the growth rate observed in the previous year to the total revenue generated in the prior year. By multiplying the total revenue from the previous year by one plus the revenue growth percentage from the previous year, the measure projects a straightforward forecast for the current period, assuming a linear progression of revenue growth.



Next we will be building a scenario analysis into the forecasting model to find what the revenue would be at various level of growth/decline. We will use parameters to create a growth parameter between -300% and 300% at 50 % increments. We will be creating a new measure called scenario forecast to forecast last year revenue by growth rate. This measure calculates a scenario-based forecast for total revenue by projecting future revenue based on a specified growth rate. It takes the total revenue from the previous year and multiplies it by one plus the growth rate value. Essentially, it assumes that the revenue will increase or decrease according to the specified growth rate, allowing for scenario analysis and forecasting of revenue trends.



From the visual we can infer that the 2022 scenario forecast at a 60 % increase in revenue is 287 M.

Sensitivity analysis:

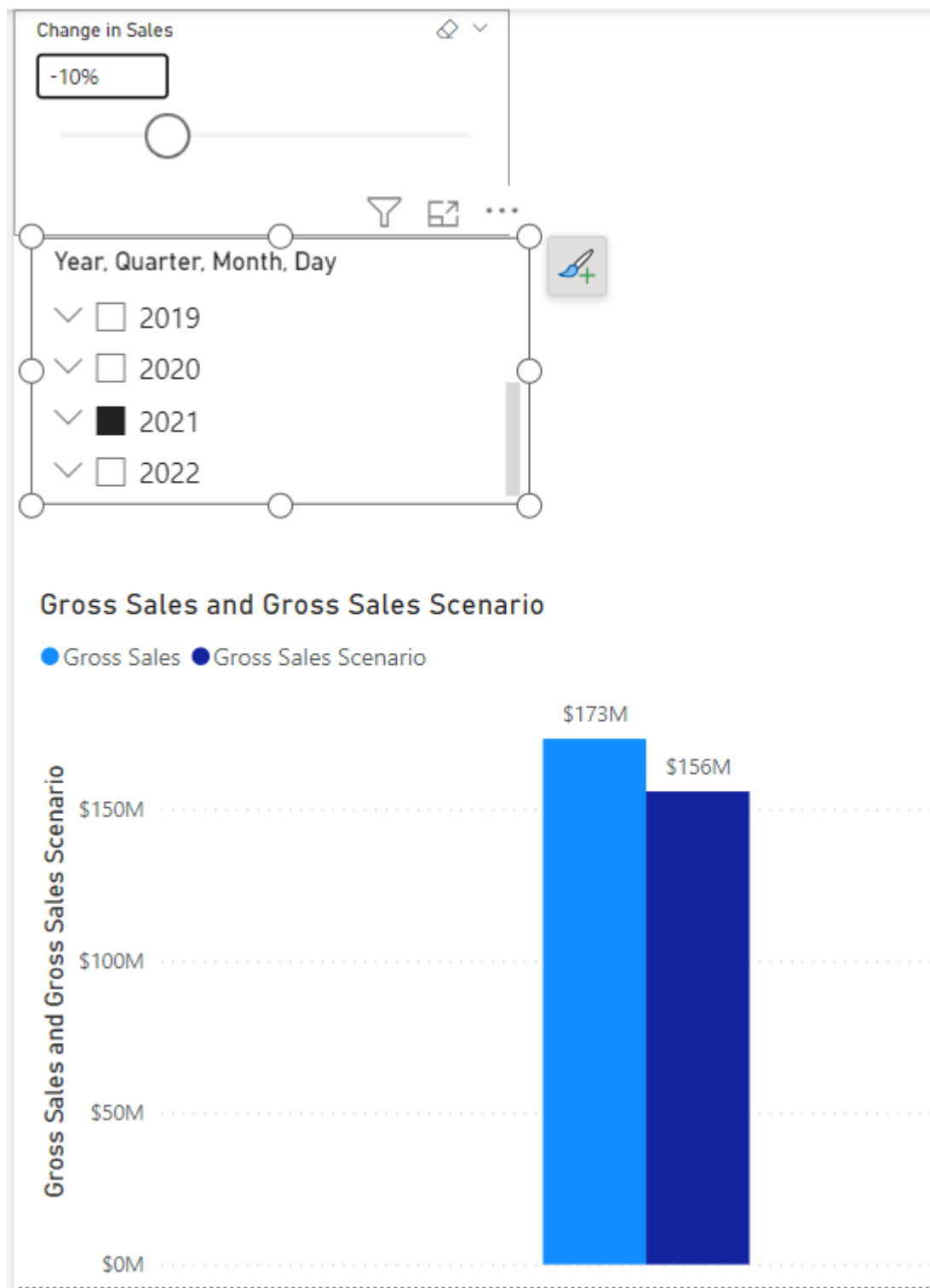
Sensitivity analysis is a type of financial modeling that evaluates the performance of a dependent variable given a range of inputs. This is similar to

scenario analysis in that they both analyze how a dependent variable will react to certain inputs. However, scenario analysis is specific to a certain "scenario", while sensitivity analysis is more open-ended because it gives a range of inputs and values. The goal of sensitivity analysis is to understand how the dependent variable reacts to a range of input values, known as independent variables.

When creating a sensitivity analysis, it's important to understand the difference between a dependent and an independent variable. Dependent variables derive their value from the financial model and therefore rely on independent variables. They are often the observed output of the analysis. Independent variables derive their value from outside of the financial model. They are the inputs of the analysis. For example, look at this equation. Which variables are dependent and which are independent? Revenue is a dependent variable in this example because it relies on three other independent variables; gross sales, discount, and premium. Often, sensitivity analysis is presented in a table with conditional formatting that highlights the values from highest to lowest.

The CFO talked about some potential strategies such as reducing Discount/Premium to drive more sales. He is interested how changes in gross sales and Discount/Premium impact revenue.

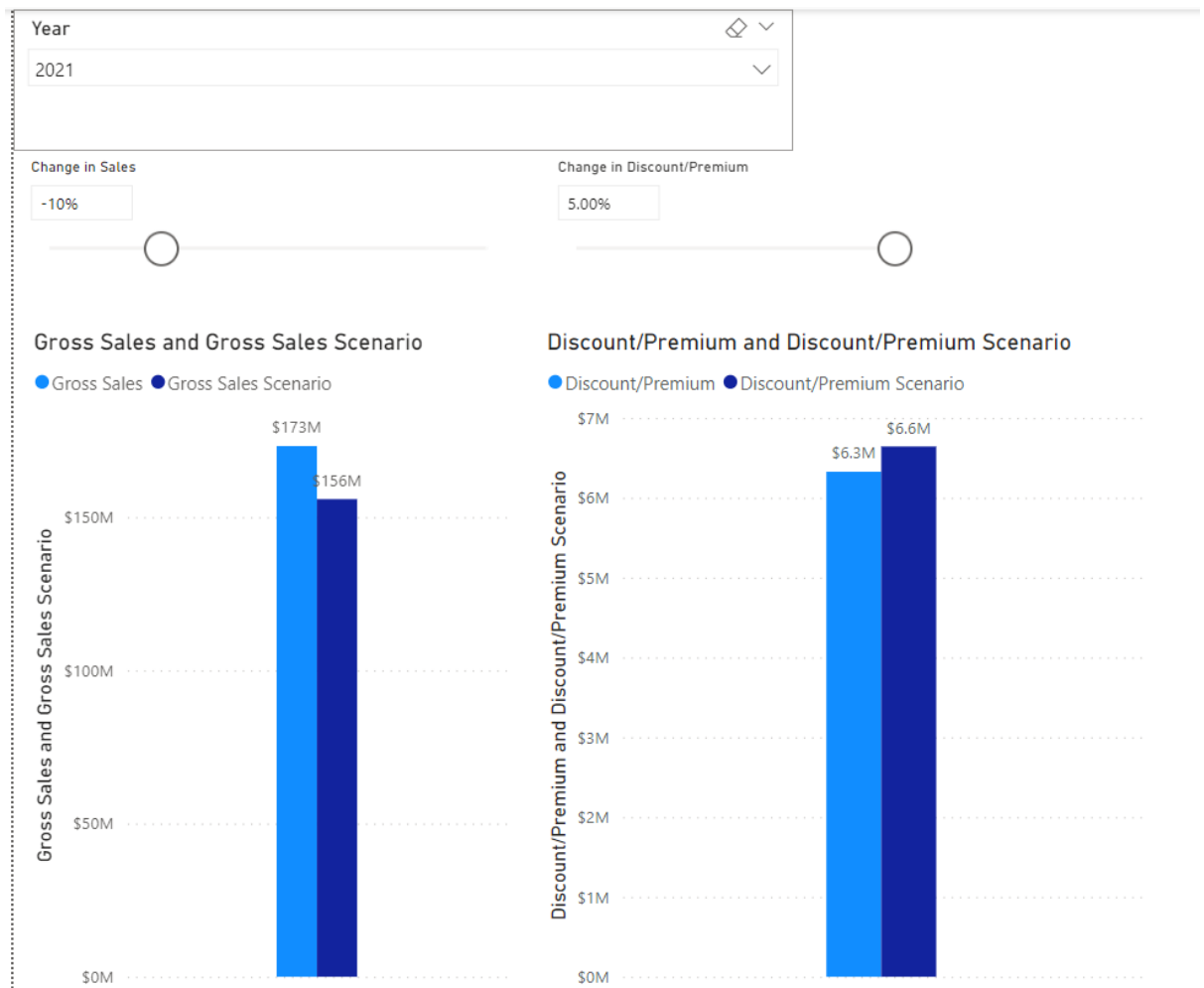
We will be creating a parameter called change in sales ranges between decimal number -0.2 and 0.2 with 0.1 increments. Next we created a new measure called Gross sales scenario that calculates a scenario-based projection of gross sales by considering the change in sales as specified in the "Change in Sales" parameter value. It multiplies the total gross sales by one plus the change in sales value, which represents the percentage change in sales. This adjustment accounts for the anticipated increase or decrease in sales volume according to the specified scenario. the "Gross Sales Scenario" measure provides a forecast of gross sales based on the current sales data and the projected change in sales volume, enabling scenario analysis.



From the visual we can infer that the gross sale in the year 2021 would be 156M if it were 10% less.

Analysing change in discount/premium:

We just have created one for gross sales scenario measure for sensitivity analysis. Now its time to build another for discount/premium.



The discount/premium would be 6.6M for 2021 if it were 5% more.

Since we have created 2 scenarios now its time to run the sensitivity analysis of sales. Now we created a new measure that calculates revenue sensitivity.

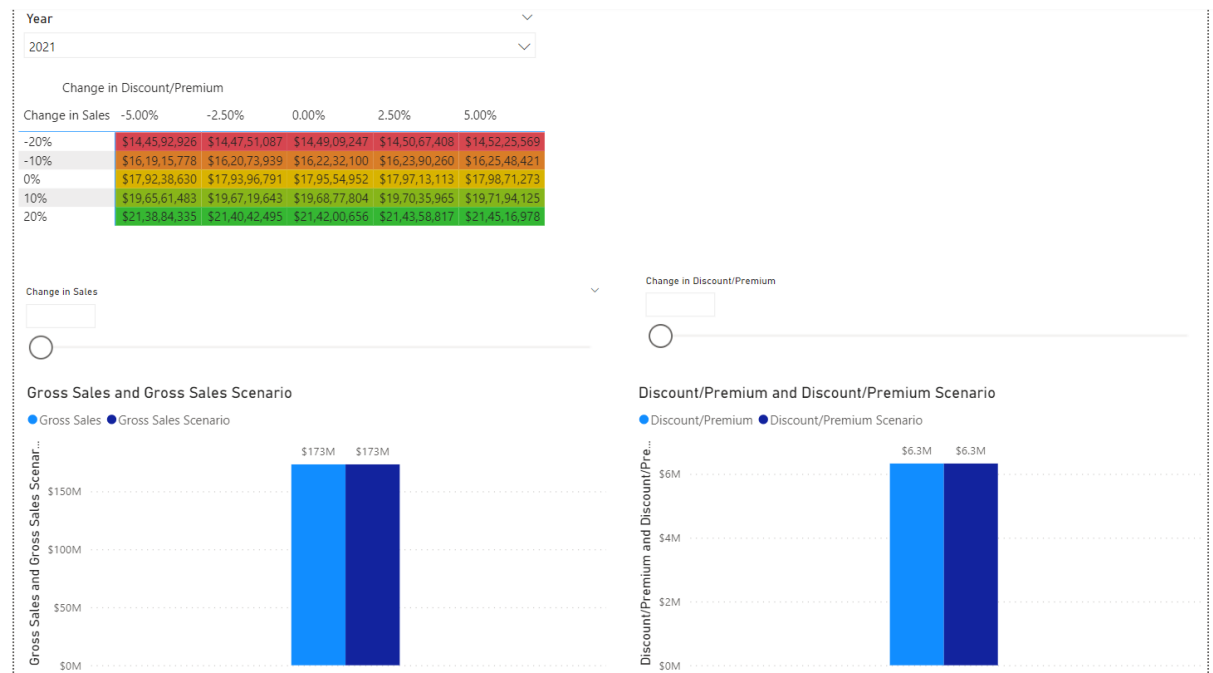
Revenue Sensitivity: This measure represents the sensitivity of total revenue to changes in two key scenarios: gross sales and discount/premium adjustments. It calculates the overall impact on revenue by summing the effects of these two scenarios.

1. **Gross Sales Scenario:** This component accounts for changes in total revenue resulting from adjustments in gross sales, which may include factors such as changes in product pricing, sales volume, or market demand.
2. **Discount/Premium Scenario:** This component considers the impact of variations in discounts or premiums applied to sales transactions. Adjustments in discount rates or premium pricing can influence customer behavior and purchasing decisions, thus affecting total revenue.

By combining the effects of these two scenarios, the "Revenue Sensitivity" measure provides a comprehensive view of how changes in gross sales and discount/premium strategies impact overall revenue performance. It helps

stakeholders understand the potential revenue implications of different scenarios, enabling informed decision-making and strategic planning to optimize revenue outcomes.

We have also created a sensitivity table for revenue sensitivity using a matrix visual with conditional formatting added so that higher values are darker in color.



The revenue would be 213.88 M for the year 2021 if gross sales increased 20% and discount/premium decreased 5%.

Future value:

Future value is what the investment will be worth in the future, based on a rate of return and length of time. To find future value, take the present value, which is the current value of the investment, and multiply it by one plus the interest rate, which is usually quoted as an annual rate, and compounded by the number of years it will be invested for.

Assessing future value calculations:

The board thinks it's a good idea to invest \$250,000 of Spaero's cash reserves in the market rather than let it sit in a savings account. The CFO found a 10 year bond at 6.25% interest. Our task is to determine how much the original investment will grow over those 10 years.

$$FV = PV \times (1+i)^y$$

$$\text{Future Value} = 250000 * (1 + 0.0625)^{10}$$

We can use the FV function in the powerbi too to calculate the future value.

4,66,304.54
FV

Creating Forecasts with FV:

Business is great at Spaero Manufacturing and the Board of Directors want to know what cash flows will look like 10 years from now. The CFO wants to find what costs, revenue and profits will look like 10 years from now. For that we will be creating 2 measures total cogs for the year 2021 and total revenue for year 2021. The CFO believes cogs should increase by 2.5% annually over the next 10 years. Now using FV function we will estimate what total cogs 2021 would be 10 years from now if it grew by 2.5% annually. To keep margins same , total revenue 2021 should also grew by 2.5% annually. Now estimate the value of total revenue 2021 after 10 years using FV function. Finally created a measure total profit fv that calculates profit by subtracting Total CGS FV from Total Revenue FV.

\$90.73M
Total Profit FV

So the estimated total profit 10 years from now is \$90.73 M.

Finding the future value of Annuities:

The company's offices are a bit old and will need to be renovated in four years. While the budget is tight the CFO was able to cut down some unused employee benefits to save \$10,000 per month that can be put directly into savings for this project. Our task is to estimate how much they will have saved four years from now. We have created a new measure called Savings to find

the value of savings account if \$10,000 were saved every month for 4 years and with a 2.5% interest rate.

505.32K

Savings

The CEO wants to have a budget of \$600,000 by the end of four years. Unfortunately, saving \$10,000 each month doesn't get there. So we created a new measure called Payment to find the monthly amount they need to save to meet this goal. Once again, assume the same interest rate of 2.5% and that the savings are deposited at the beginning of each month. We used PMT function to achieve this.

11.87K

Payment

So the CEO needs to save 11.87K monthly to meet their savings goal of \$600,000.

Estimating the present value:

Present value (PV)

Present value is the current value of money that will be received in the future. Another way to think about the present value is to ask, "How much do I need to invest today to have the equivalent of the future value by the end of the time period?" Finding the present value of money is often referred to as discounting. Remember that cash tomorrow is not as valuable as cash today, so the present value formula discounts the future value by reducing it. This is why the interest rate in the present value formula is called a discount rate. Annuities are fixed amounts paid in regular intervals. Because annuities are cash flows received in the future, we can find the present value of these cash flows. The present value annuity formula discounts each payment by its respective number of years, then adds up all the discounted cash flows together to find what it's worth today.

The CFO found an investment that will yield 6% annually. They want to figure out how much they should invest in having \$250,000 saved in the investment after nine years. So we need to find the present value of \$250,000 ten years from now at a 6% discount rate.

$$\text{Present Value} = FV/(1+i)^y$$

1,37,408.18
Present Value

Create a savings plan with PV annuities:

The head of HR wants to create a new benefits program to attract and retain top talent at Spaero over the next five years. They suggest an annual party program for each employee that costs \$100 each year. The CFO thinks this is a great idea if the initial investment stays under \$500,000. They found a very lucrative investment that could earn 7% risk free on the cash they set aside for this project.

Created a new measure called Annual Program Cost to count how many people work at Spaero and multiply by \$100. Created another measure called Initial investment that use PV function to calculate how much cash needs to be set aside for this project at a 7% discount rate for five years. Because this project pays out on an annual basis, we will need to use the program's annual cost in the pmt category.

498.99K

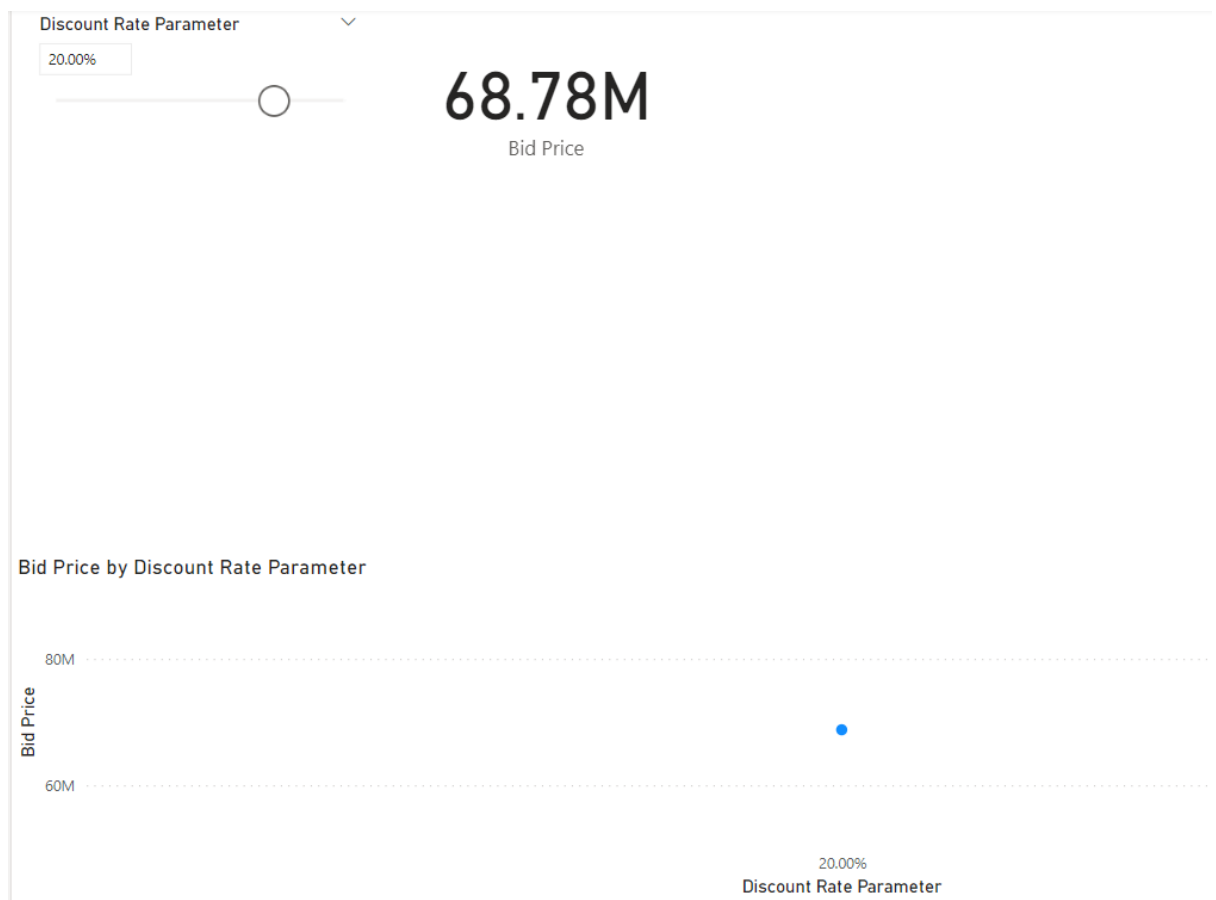
Initial Investment

So as the Initial Investment is under \$500,000 the CFO can approve the project's financing.

Value an acquisition using PV:

A competing firm, Raer wants to sell one of its manufacturing plants and the rights to their patent, which expires in 5 years. The CFO expects that Spaero could generate an average \$23mm in profit each year if they got in on this deal. The CFO wants to know how much Spaero should be willing to pay for this intellectual property at various discount rates.

First we will be creating a discount rate parameter. Then created a measure called Bid price that finds the $PV()$ of receiving 23,000,000 each year over the next 5 year using the discount parameter value.



So we can infer that the bid price at 20% discount is 68.78M.

Capital Budgeting:

Capital is another word for money. So capital budgeting is the process of allocating money to new projects that generate cash flows. Analysts will estimate those cash flows using forecasts and details about the project. From there, a recommendation can be made on whether or not to invest. Because companies have limited budgets, most projects are mutually exclusive, which means they can only choose one. So how would they decide?

Net present value is one of the most reliable tools for making investment decisions. It is the sum of all discounted cash flows of a project. As you may have noticed, the formula is just a series of present-value calculations summed together. If NPV is less than zero, don't undertake the project. This is because the project would yield a negative return, and the company would be better off investing it elsewhere.

The first thing we should do is calculate the present value for each cash flow, using t as the number of years to discount.

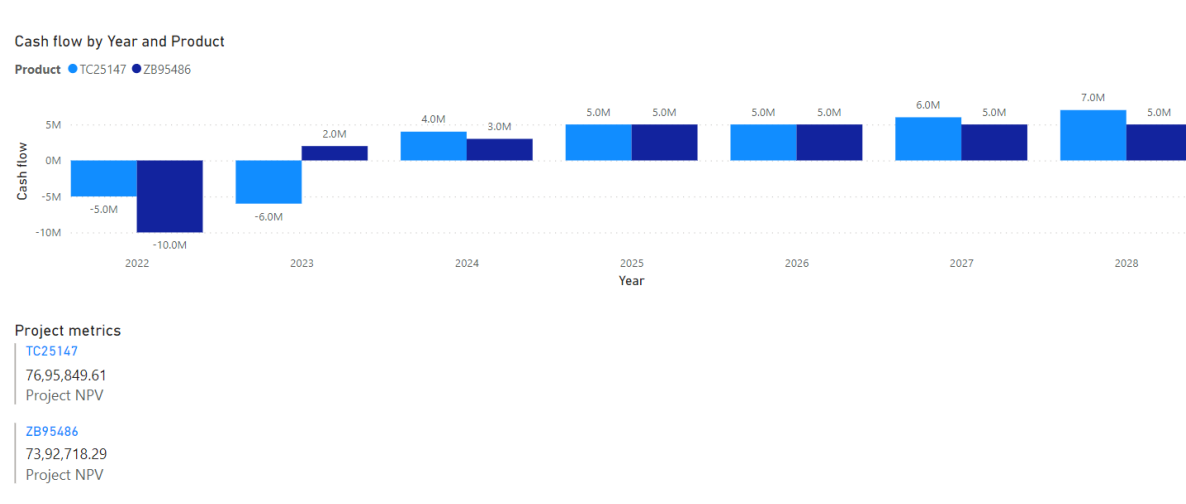
Once we have our present values, we simply sum them up at the end. Since NPV is positive, the company should invest into this project. Discount rates are super important in time value of money calculations, especially in net present value. This graph, known as an "NPV Profile", shows how the net present value changes as the discount rate changes. The net present value eventually becomes negative at a high enough discount rate. Because of this relationship between the discount rate and net present value, analysts must select the right rate for the project.

The profitability index is another useful tool in capital budgeting. It turns NPV into a ratio and tells the analyst how efficiently the project generates a dollar for every dollar spent. Therefore, it is used to prioritize projects when capital is limited. The higher the ratio, the better return per dollar. Anything less than one should not be undertaken, as this would imply a negative NPV.

Estimating NPV:

Spaero's product engineering and new development team (SPEND) has concepts for 2 new products and has provided some cash flow estimates. These projects are mutually exclusive, so the CFO has tasked us with finding the NPV of these cash flows to determine which product SPEND should develop next.

We have created a measure called Project NPV to evaluate cashflows using $XNPV()$. The CFO told us to use the company's WACC as the discount rate, which is 10%.



So the company should start developing the product TC25147 as it has higher NPV of 76,95,849.61.

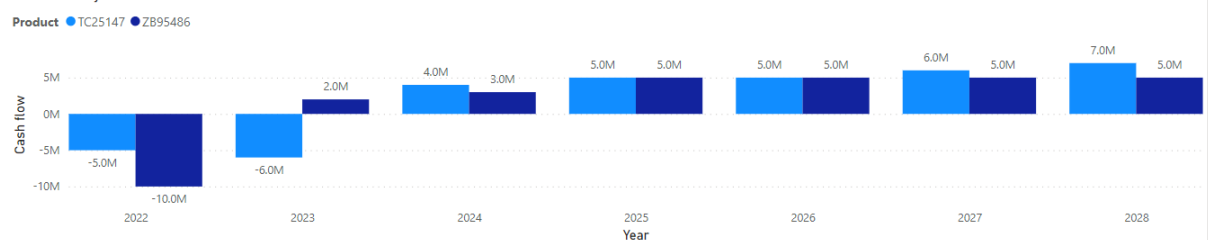
Calculating Profitability Index(PI):

PI turns NPV into a ratio by dividing NPV by the initial investment amount. This is useful for understanding the rate of return of the project. The CFO is interested in what the PI is for the two projects SPEND is considering.

We have created Initial investment measure which calculates the initial investment required for the project. It sums up all the negative cash flows (outflows) from the 'Capital Budgeting' table. In financial terms, this represents the total amount of money needed to initiate the project. Another measure created was Project PI. This is a measure of the profitability of a project, calculated by dividing the present value of future cash flows (Project NPV) by the initial investment (Initial Investment).

- If the Project PI is greater than 1, it indicates that the project is expected to generate positive returns and is considered financially viable.
- If the Project PI is less than 1, it suggests that the project is expected to generate returns less than the initial investment, indicating a potential loss.
- If the Project PI equals 1, it implies that the project is expected to generate exactly enough returns to cover the initial investment, with no additional profit.

Cash flow by Year and Product



Project metrics

TC25147	
Project NPV	76,95,849.61
Project PI	1.70
ZB95486	
Project NPV	73,92,718.29
Project PI	1.74

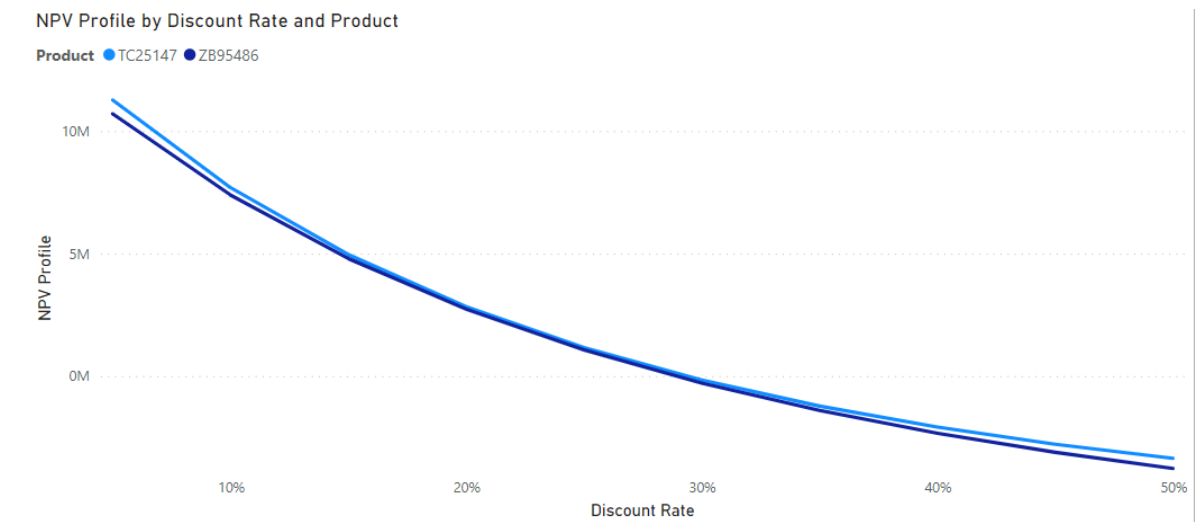
Based on the NPV and PI analysis, the company should start developing the product TC25147 as it has higher NPV. The golden rule is always stick with

higher NPV values unless there is a compelling story to choose a different metric.

Creating a profile for NPV:

The CFO asked us to build an NPV profile of the Cash flows. An NPV profile is a type of sensitivity analysis that displays the net present value at different discount rates. This is great to show the project's sensitivity to different discount rates.

First we created a discount rate parameter to dynamically change for different values. Next created a measure called NPV profile using `XPNV()` to find the NPV of cash flows. For discount rate in `XPNV()`, used the discount rate parameter value.



Form this visual, we can infer that the NPV profile first turn negative for the products at 30.00% discount rate. The point at which NPV is zero tells us the rate of return for the project.

Internal rate of return (IRR):

As we've previously explored, discount rates play an important role in the time value of money and net present value. The NPV Profile shows that NPV decreases as the discount rate increases: they have an inverse relationship. The discount rate at which NPV equals zero is the internal rate of return or IRR. IRR is the rate of return for the project's cash flows, which can be used to compare against other investments.

Making decisions with IRR

When companies invest in projects, they usually have a target return they're trying to beat, called a hurdle rate. If the IRR is greater than the hurdle rate, the project should be undertaken. If the IRR is less than the hurdle rate, then the project should be avoided, as it doesn't make the minimum return required. For example, your company has a hurdle rate of 10%. If the IRR is 7%, should they invest in the project? The answer is No. The IRR is less than the company's required rate of return. When dealing with mutually exclusive projects, follow the golden rule: choose the project with the highest net present value, since NPV represents a real dollar amount.

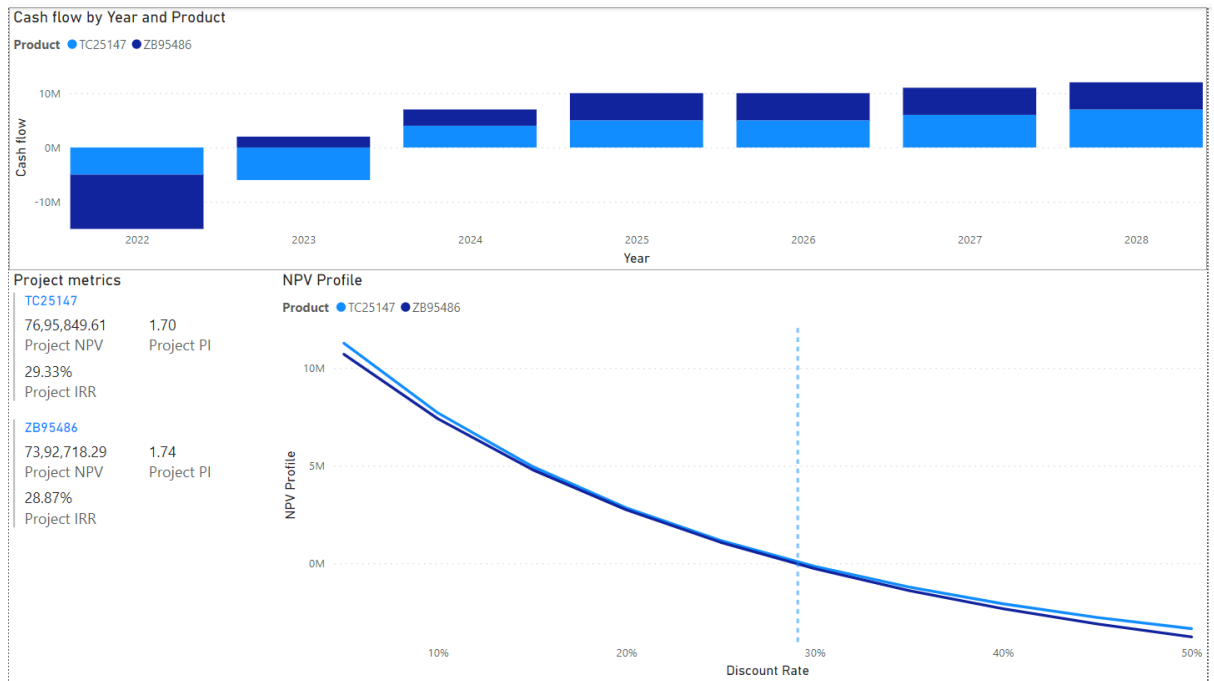
Payback period

Many companies are also interested in finding the time it takes to break-even on their investment. The break-even point is the point where the initial investment is paid back by all the cash flows. The payback period is simply the time it takes to break even on an investment. Its simplicity makes it a popular metric amongst financial professionals. However, it does have some drawbacks. One of the most notable is it doesn't consider the principles of the time value of money, so it does not discount cash flows. Another shortfall is that it does not analyse a project's profitability. Making decisions with a payback period is also straightforward. An investment horizon is the length of time an investor wants to be invested in an asset. Therefore, the project shouldn't be selected if the payback period is longer than the investment horizon.

Calculating IRR:

The CFO is interested in finding the IRR for each product and want to add it to our dashboard next to project metrics. This is our next task.

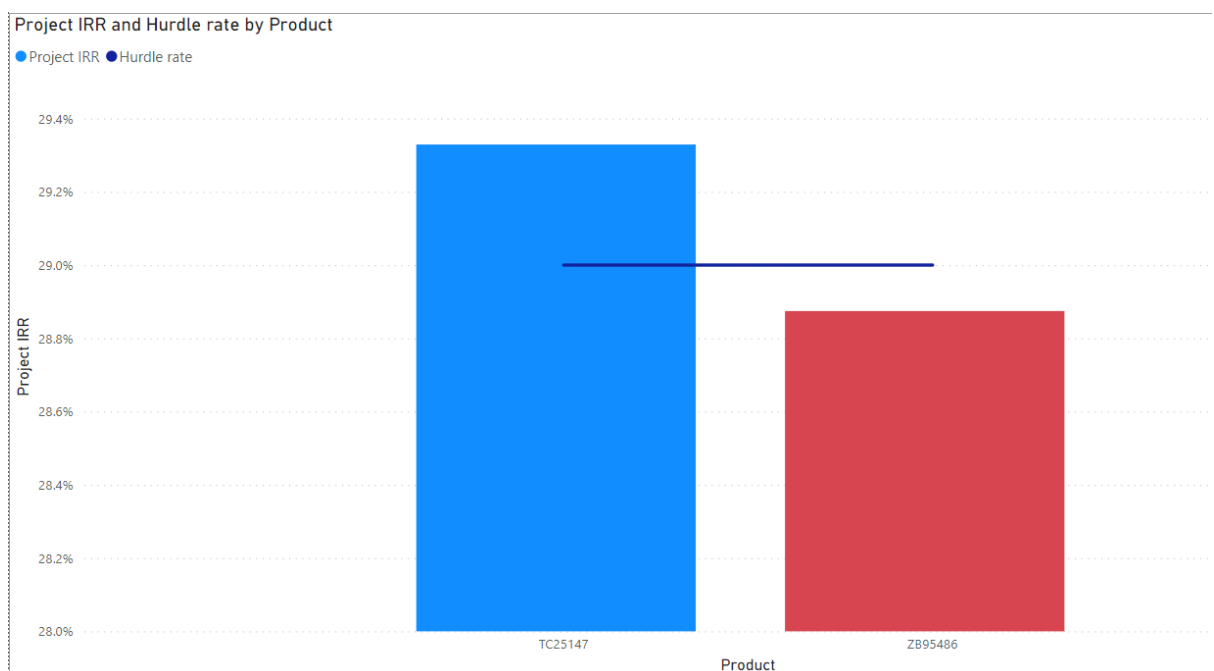
Created a measure called Project IRR that uses XIRR () to find the internal rate of return for the cash flows.



As TC25147 has highest IRR and NPV, it is obvious investment choice.

Calculating Hurdle rates:

Now our task is to add hurdle rate to the dashboard. Created a new measure called Hurdle rate which is equal to company's hurdle rate of 29%. Created another measure called Hurdle diff that subtracts Project IRR from hurdle rate. Also the CFO wants to highlight the column in red if it does not met the hurdle rate.



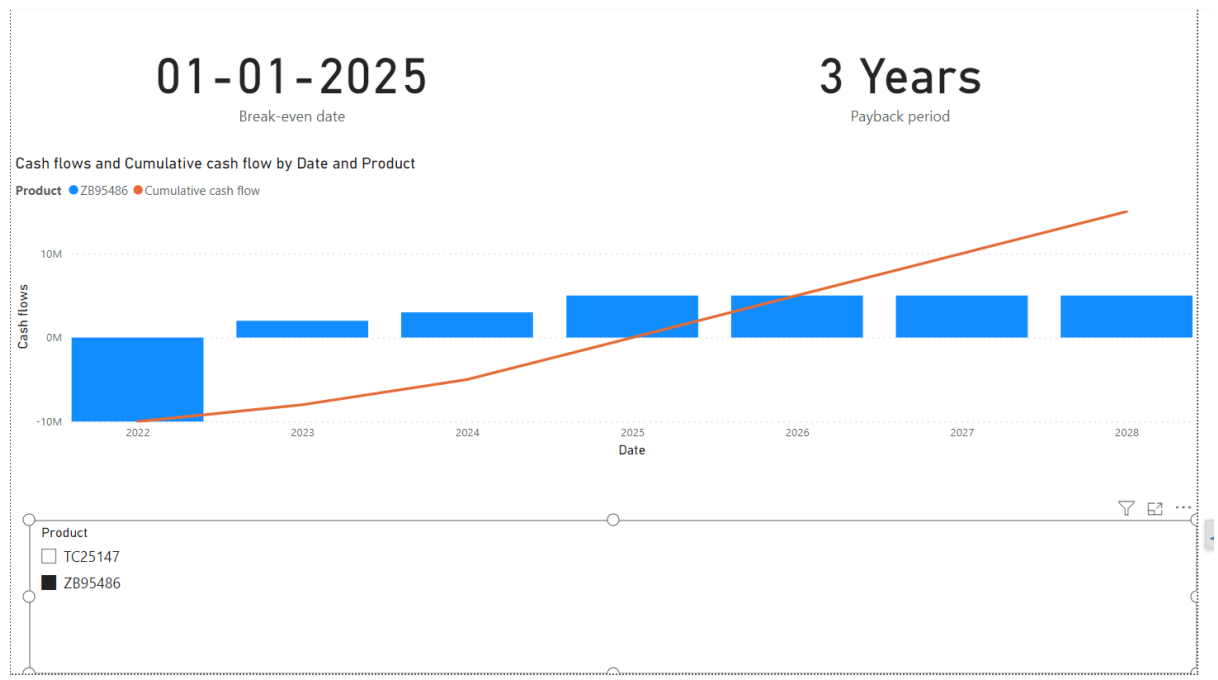
So here we can infer from the chart that the product ZB95486 didn't meet the company's hurdle rate.

Finding the payback period on payback:

Speaoro's main competitor, Raer heard about the new products and the plans to develop a competing line of products. The CEO thinks to expedite the SPEND'S development timeline. Spearo could potentially have the capital to develop and launch both the products before Raer if they prioritize their spendings. As soon as they break even on the first project, they can start development on the second project. The CFO wants us to find the payback period of each project.

Created a measure called cumulative cash flow to calculate the running total of cash flow by date. Next created a measure called break even date to find the first date that cumulative cash flow is zero or more. The last measure created is pay back period to find the difference in years between start date and break even date.





The project ZB95486 has shorter payback period of 3 years where as the project TC25147 has payback period of 4 years. So, in this scenario, Spaero should start developing ZB95486 first.

Financial Analytics Report Summary

Approach Used:

In this financial analytics report for Spaero Technology, we employed various analytical techniques and methodologies to provide insights into the company's financial performance, customer analytics, scenario analysis, and capital budgeting. We utilized key performance indicators (KPIs), objectives and key results (OKRs), and analytical frameworks such as profitability analysis, scenario forecasting, sensitivity analysis, future value calculations, and capital budgeting techniques.

Insights:

- Profitability Analysis:** Identified the product with the highest net income and profit margin, highlighting potential pricing strategies to increase sales volume.
- Revenue Performance:** Analyzed revenue performance over time and compared it to targets, revealing trends and areas for improvement.
- Customer Analytics:** Explored customer distribution by country and gross sales, emphasizing opportunities for targeted marketing and personalized engagement.

4. **Sales Trend Analysis:** Examined the trend in gross sales over time, indicating consistent growth and potential market demand.
5. **Scenario Analysis:** Conducted scenario analysis to understand the impact of changes in gross sales and discount/premium on revenue.
6. **Future Value and Present Value:** Estimated future cash flows and assessed the present value of investments, considering factors such as interest rates and project timelines.
7. **Capital Budgeting:** Evaluated investment projects using metrics like net present value (NPV), profitability index (PI), internal rate of return (IRR), and payback period to make informed investment decisions.

Conclusion and Recommendations:

Based on the analysis, the following conclusions and recommendations are drawn:

1. **Pricing Strategy:** Consider adjusting pricing for products with exceptionally high profit margins to stimulate sales volume and maximize revenue.
2. **Marketing and Customer Engagement:** Focus on expanding market presence in countries with lower representation, such as India, while continuing to strengthen relationships with high-value customers through personalized engagement strategies.
3. **Forecasting and Scenario Analysis:** Continue to use scenario forecasting and sensitivity analysis to anticipate and adapt to changes in market conditions, sales volume, and pricing.
4. **Investment Decisions:** Prioritize investment projects with higher NPV, IRR, and shorter payback periods to maximize returns and achieve strategic objectives.
5. **Financial Planning:** Develop a comprehensive financial plan that includes future value projections, savings strategies, and investment priorities aligned with the company's long-term growth objectives.

In conclusion, by leveraging advanced financial analytics techniques and frameworks, Spaero Technology can gain valuable insights into its financial performance, customer dynamics, and investment opportunities, enabling informed decision-making and strategic planning for sustainable growth and profitability.

