This Case Study follows the 6 steps Data Analysis Process;

1. Ask
2. Prepare
3. Process
4. Analyze
5. Share
6. Act

Introduction

Bellabeat is a high-tech company that manufactures health-focused smart products for women. The data was collected on its key areas including activity, sleep, stress, and reproductive health has allowed Bellabeat to empower women with knowledge about their own health and habits. Since it was founded in 2013, Bellabeat has grown rapidly and quickly positioned itself as a tech-driven wellness company for women. Although Bellabeat is a small company but nevertheless they are successful and have the potential to become a larger player in the global smart device market. Urška Sršen, a cofounder and chief Creative Officer of Bellabeat, believes that analyzing smart device fitness data could help unlock new growth opportunities for the company.

Scenario

Since 2013, Bellabeat was founded and as such, the company has grown rapidly and quickly, and by that placed itself as a high-tech company providing high-driven decisions for women’s health. The company has 5 products which the case study will focus on one product from below company products;

1. Bellabeat App: It’s an app that connects to their line of smart wellness products
2. Leaf: Is a classic wellness tracker which can be worn as a bracelet, necklace, or clip. The Leaf tracker connects to the Bellabeat app to track activity, sleep, and stress.
3. Time: This wellness watch combines the timeless look of a classic timepiece with smart technology to track user activity, sleep, and stress. The Time watch connects to the Bellabeat app to provide you with insights into your daily wellness.
4. Spring: This is a water bottle that tracks daily water intake using smart technology to ensure that you are appropriately hydrated throughout the day. The Spring bottle connects to the Bellabeat app to track your hydration levels
5. Bellabeat Membership: Bellabeat also offers a subscription-based membership program for users. Membership gives users 24/7 access to fully personalized guidance on nutrition, activity, sleep, health and beauty, and mindfulness based on their lifestyle and goals.

The insights discovered will then help guide marketing strategy for the company.

Ask Phase

Key task

To identify potential opportunities for growth and provide recommendations for the Bellabeat marketing strategy improvement based on trends in smart device usage which will then be applied to Bellabeat customers.

Key Stakeholders:

* Urška Sršen: Bellabeat cofounder and Chief Creative Officer
* Sando Mur: Mathematician and Bellabeat’s co-founder
* Bellabeat marketing analytics team: A team of data analysts responsible for collecting, analyzing, and reporting data that helps guide Bellabeat’s marketing strategy.

Questions to guide the analysis:

1. What are some trends in smart device usage?
2. How could these trends apply to Bellabeat customers?
3. How could these trends help influence Bellabeat marketing strategy?

Prepare

The data being used in this case study can be found here:

The data was downloaded as a CSV file, which was duplicated and saved as a Excel Workbook file format prior to analysis to maintain the Original copy. This Kaggle dataset contains personal fitness tracker data from thirty Fitbit users. These users consented to the submission of personal tracker data, including minute level output for physical activity, heart rate, daily intensities, calories, steps, minute METs, and weightLogInfo. It contains information about users’ daily activity that can be used to explore users’ habits. The data set consist of 18 CSV files organized in long format.

Whether the dataset follows the ROCCC Analysis as mentioned below;

1. Reliability- MEDIUM, for a small company having the potential to become a larger company in the global smart device manufacturer. A data model can be developed to manufacture in small quantities to ascertain whether the strategy followed can be maintained. The data comes from 30 Fitbit users who consented to the submission of their personal tracker data.
2. Originality- LOW: This is a third-party data collected using Amazon Mechanical Turk.
3. Comprehensiveness- MEDIUM: The dataset contains fields on daily activity and organized in long format.
4. Current- LOW: This data is from January 2016 through March 2016. The data is not current, and thereby, may not be accurate on user habits due to change over the years.
5. Cited- LOW: Data was collected from a third-party, and therefore unknown.

The data sheets are imported with the help of the PASTE Special in Excel and FILTER into the summarized daily activity prior to processing of data.

Process

The data files are merged and compiled into one single worksheet and, the data on each individual is compiled and standardized into a single record each.

Cleaning stages;

Due to many NULLS in the data sets, inconsistent labels, missing data, inaccurate data in the fields and records.

* The data sets are merged using the JOIN clause in SQL
* Duplicate data and errors are removed, inconsistent punctuations, variations.
* Field length is checked and made sure it corresponds to the records, extra spaces and blanks are also checked to maintain accuracy during analysis.
* Spellings and inconsistent capitalization are checked along with other typos.
* The sheet’s formatting is checked through the clear formatting tool and made sure the criteria mentioned is met.
* The Sort and Filter functions are used to analyze the records and verified it is fixed to the assigned record Nos (ID Number)
* I developed a data model which is to be applied for the upgrade and production of Bellabeat’s Time Watch, which would be used to monitor all the company’s product from the Time watch.

Analyze

Prior to analysis, I will first summarize how many participants there are in each category;

In a nutshell, there are 32 participants in the activity, calories, active minutes, total distance, tracker distance, and intensities, 29 in sleep dataset, 30 in heart rate, 26 in METs, and 7 in Weight Log dataset, BMI dataset and Sedentary respectively.

There are no significant changes in Weight Log and BMI records from these 7 participants.

Observations made from the above summary:

* The average total number of steps per day is 7227 while the average steps count is 2595. The CDC recommends people to take 10,000 steps daily.
* The majority of the participants are very active
* Sedentary minutes on average is 12.9 hours
* The majority the participants burn 32 calories per hour
* The majority of the participants experienced an average heart rate of 78 beat per minutes
* The majority of the consented users sleep for 6.75 hours on average

Share

The link here is my Case study workbook in google sheets

<https://docs.google.com/spreadsheets/d/1sxVcRWZC_or2FXGvNOU3KKy90bjvCbPRbLOlPmKJoRo/edit?usp=sharing>

Act

Conclusion and Recommendations

After analyzing the FitBit Fitness tracker data, I came up with the following recommendations for Bellabeat Time watch marketing strategy based on trends in smart device usage.

1. Instead of having multiple products, I first recommend marginalizing all the products into two products i.e. Time Watch and Bellabeat app. For the production of this new Watch, A data model was developed on assumption of the proposed Time Watch price, potential revenue, potential profit, and man-working hours to ascertain the result.
2. The Bellabeat’s app should be evaluated, upgraded to match the smart watch capabilities in regards to the trends discovered in smart device usage.
3. The app should also be tested and monitored for a specified period of time to make sure it satisfies the customer and end users. This can be met through Customer survey responses, interviews and ratings of the new product.
4. The result from these surveys can be used to secure the company’s image while ensuring customer satisfaction is met.
5. The company should take advantage of the most viable means of communication to advertise their product.
6. Also, in the production of the merged Time watch, the company should introduce new fand potential features which will improve customer health, also they may introduce a gift for as a *store coin or coupon*, which can be used to purchase other products.
7. By introducing this *coin*, it should attract more users, this should be advantageous to the customer in terms of both gaining coins for reaching a specific milestone and at the same time improving their health. And for the company, this will generate more revenue and place them among major competitors.
8. Finally, the company should implement a policy on periodical surveys to maintain customer relation and satisfaction.