



CAPSTONE PROJECT

GOOGLE
DATA ANALYTICS
CERTIFICATE

PREPARED BY
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ABOUT THE COMPANY

Urška Sršen and Sando Mur founded **Bellabeat**, a high-tech company that manufactures health-focused smart products. Sršen used her background as an artist to develop beautifully designed technology that informs and inspires women around the world. Collecting data on 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.

By 2016, Bellabeat had opened offices around the world and launched multiple products. Bellabeat products became available through a growing number of online retailers in addition to their own e-commerce channel on **their website**. The company has invested in traditional advertising media, such as radio, out-of-home billboards, print, and television, but focuses on digital marketing extensively. Bellabeat invests year-round in Google Search, maintaining active Facebook and Instagram pages, and consistently engages consumers on Twitter. Additionally, Bellabeat runs video ads on Youtube and display ads on the Google Display Network to support campaigns around key marketing dates.

Sršen knows that an analysis of Bellabeat's available consumer data would reveal more opportunities for growth. She has asked the marketing analytics team to focus on a Bellabeat product and analyze smart device usage data in order to gain insight into how people are already using their smart devices. Then, using this information, she would like high-level recommendations for how these trends can inform Bellabeat marketing strategy.

OVERVIEW

In order to explore trends in smart device usage and how they apply to Bellabeat customers, the provided dataset on Fitbit was used. Bellabeat's Leaf and Ivy directly compare to Fitbit and are two of the company's most popular products.

The datasets on Daily Activity, Hourly Intensities, Daily Calories, Daily Steps, and Daily Sleep were used as they provide more substantial and meaningful insight on the usage of Fitbit bracelets. The datasets provide data on 33 participants over 31 days of Fitbit usage.

The data cleaning process was documented on a separate text file and updated for each dataset. Processes include removing blank and duplicate data. This process found missing data for multiple participants, indicating that they did not wear the bracelet for the entire tracking period.

Microsoft Excel
SQL (BigQuery)
R (RStudio)

Source:

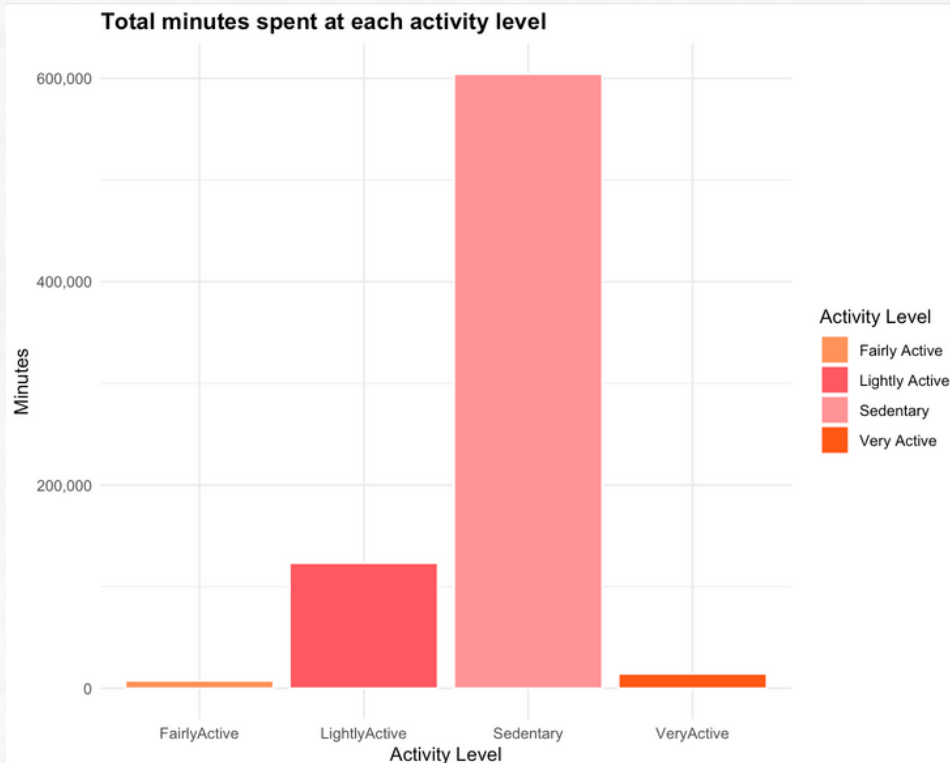
FitBit Fitness Tracker Data
by Möbius (Kaggle)

In order to maintain the integrity of the results, participants who did not wear their bracelet for the entire 31 days of tracking were not included in the analysis. For the Daily Sleep dataset, participants who wore the bracelet for less than 20 days were not included. A limitation of the provided dataset is the lack of demographic data on the participants.



TRENDS IN DEVICE USAGE

Activity

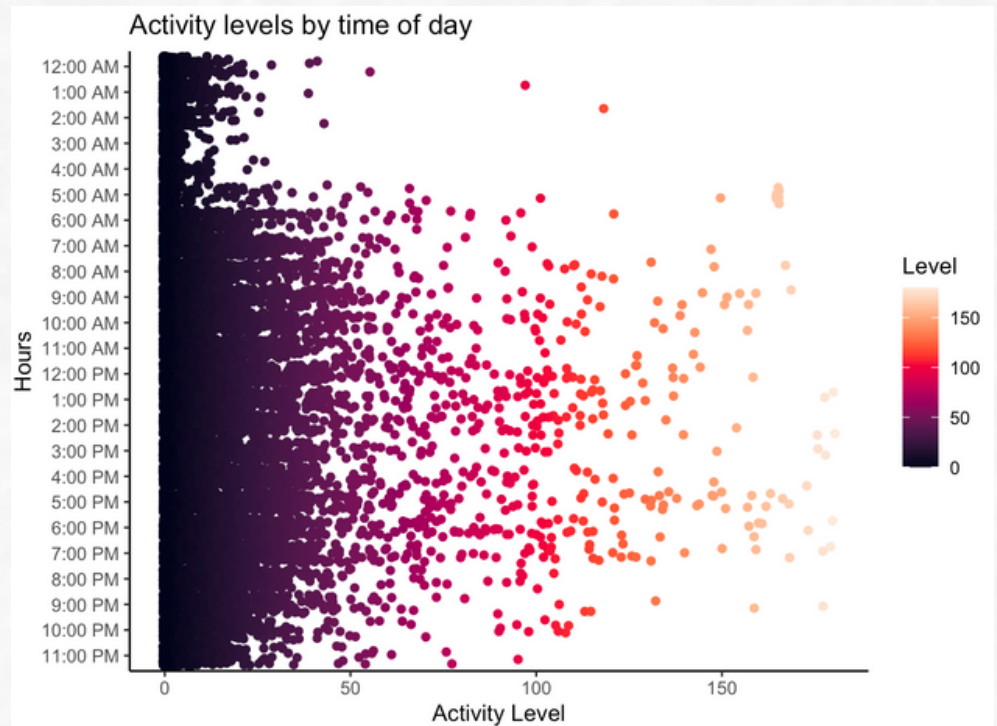


Data shows that the participating Fitbit users spent most of their time in a sedentary state, followed by lightly active, very active, and lastly, fairly active.

A preliminary conclusion might be that users do not wear the bracelet with the primary objective of tracking exercise, and that the average Fitbit user does not spend a lot of time in their days being very active.

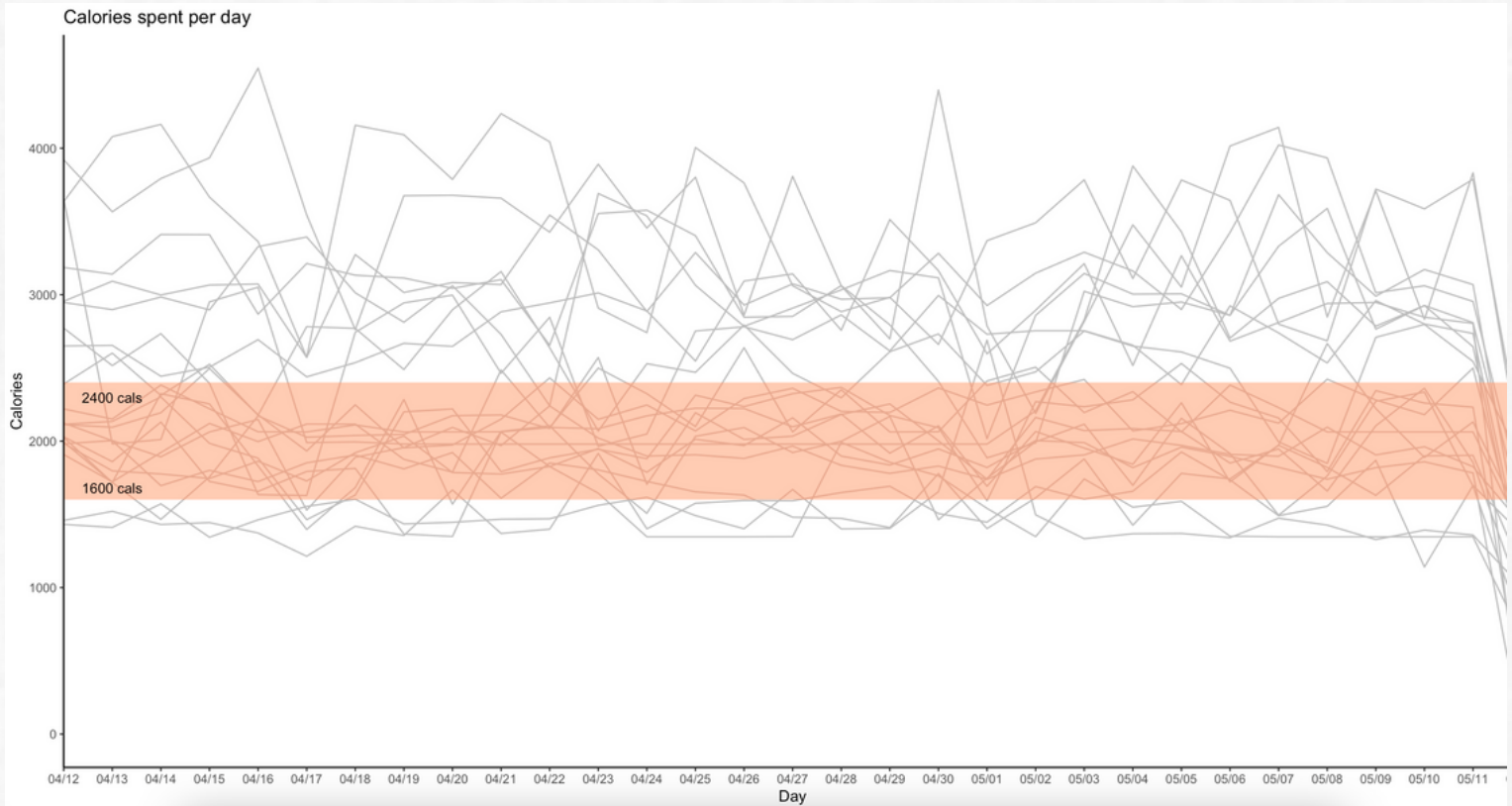
When looking at activity levels during the day, the most active times are between 5 and 9am, and between 3 and 7pm.

Between the times of 7am and 8pm, most participants had low and medium activity levels, and not many were highly active. This indicates that highly active times throughout the day tend to be early mornings and late afternoons or evenings.



TRENDS IN DEVICE USAGE

Calories

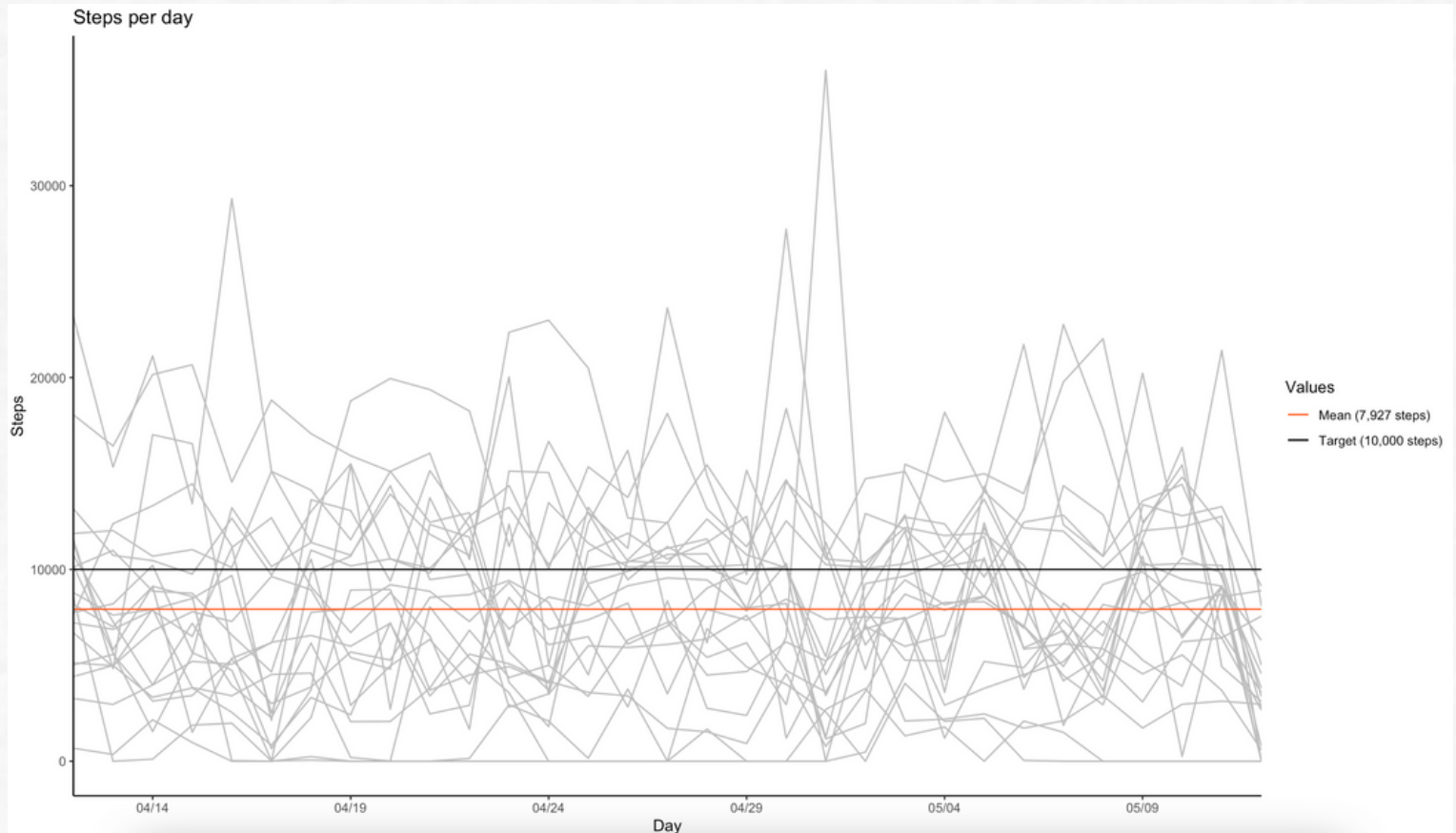


According to the U.S. Department of Health and Human Services, the average adult woman expends 1,600 to 2,400 calories per day. With that statistic and considering Bellabeat's target audience of adult women, data shows that most participants stayed within that range of calorie expenditure. Some participants were above average expenditure levels, and close to no participants were consistently under the average range of expenditure.

This might indicate that most device users aim to at least stay within the recommended range, and some users aim for higher expenditures. By combining this information with the information about Daily Activity, one possibility might be that participants burning higher than average calories per day are probably not exercising for long periods of time, but rather shorter exercising periods in the early mornings or late afternoons and evenings.

TRENDS IN DEVICE USAGE

Daily Steps

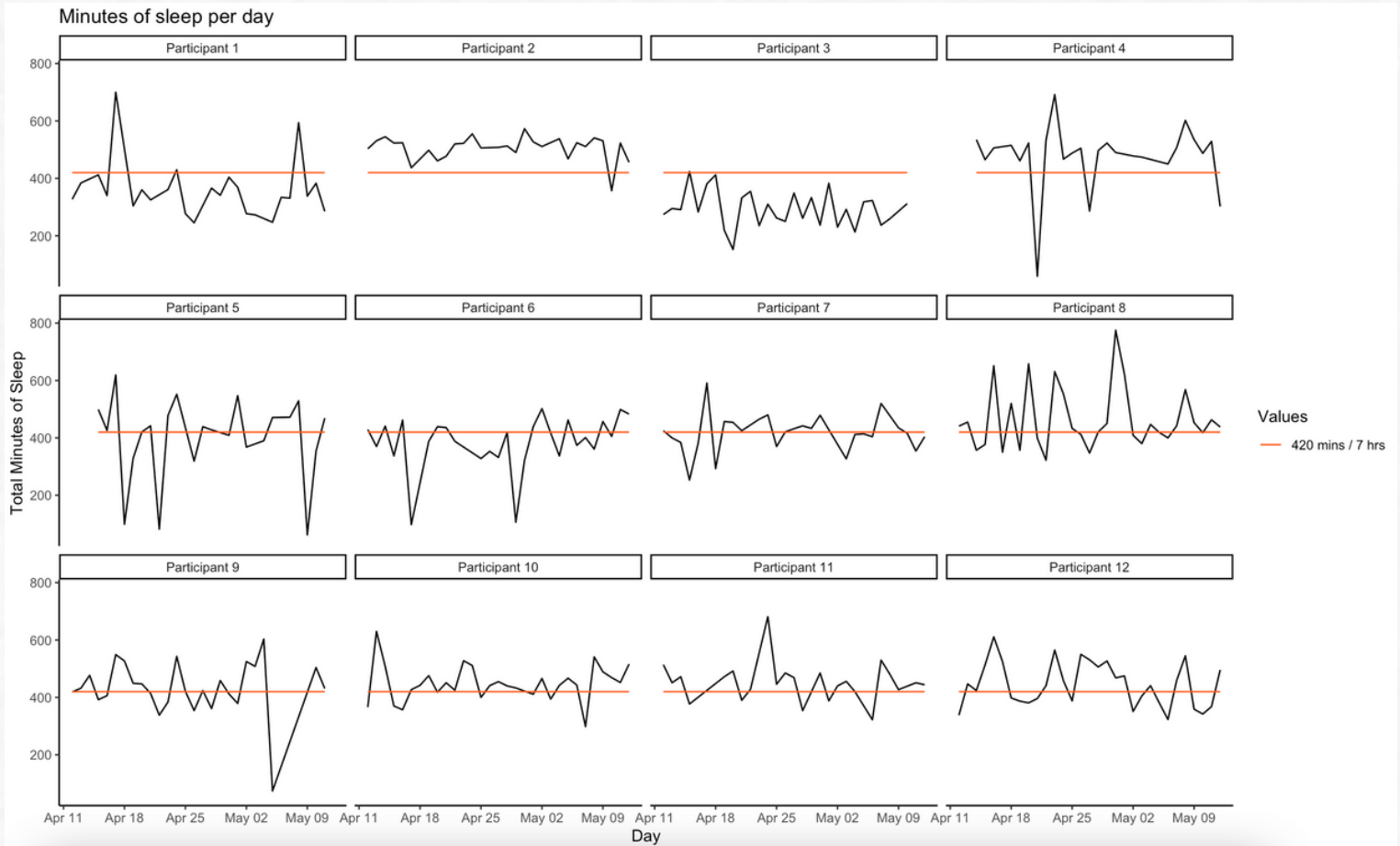


According to the U.S. Department of Health and Human Services, adults should exercise for at least 150 minutes per week. This can equate to around 5 miles walking, which led to the popular target of reaching 10,000 steps per day. Data from the Fitbit dataset shows that most participants stayed at or below the 10,000 steps target, with the mean being 7,927 steps per day. Some participants, however, reached above the 10,000 steps mark, some even reaching upwards of 20,000 steps.

The combination of this statistic with the Daily Activity levels data can lead to the possibility that most device users track their steps throughout the day in order to stay lightly or fairly active, rather than take part in high intensity exercising schedules. Some users might be interested in activities such as hiking or running, which would account for the increase in steps per day. Another possibility is that some participants might use walking as their main mode of transportation or commuting.

TRENDS IN DEVICE USAGE

Sleep



According to the U.S. Center for Disease Control and Prevention, adults between 18-60 years of age should sleep for seven or more hours per night. The data from the Fitbit dataset shows that most participants slept for around the recommended 7 hours per night, with only one participant consistently sleeping for more than 7 hours, and many participants sleeping for as little as 3 hours or less during some nights. One participant never reached the 7 hours per night target throughout the entire month of observation. Overall, the data shows relatively inconsistent sleep schedules across the board, which can be very detrimental for one's health and well-being.



CONCLUSION

The data on Fitbit usage gives important insight into trends in smart device usage. Bellabeat can benefit from the analysis of these trends to better understand the industry and why and how customers use devices such as wellness trackers.

Data shows that most participants spend the majority of their time in a sedentary state. On average, each participant spent around 68% of their month in a sedentary state. 14% of their time was spent in a lightly active state, 1% in a fairly active state, and only 2% of their time in a one-month period was spent in a very active state. Participants were in a state of highly intense activity either in the early mornings or evenings.

Participants mostly stayed within the recommended range of calorie expenditure, with some burning calories above the recommended range. The average number of steps taken by participants daily was around 7,900, which is below the recommended 10,000 steps.

When it comes to sleep schedules, most participants showed relatively irregular sleep schedules, with only one participant consistently staying above the recommended 7 hours of sleep.

Users of wellness trackers might be using this information to keep them accountable and find areas of improvement to develop better habits and a better quality of life. Users also might be restricted by their work schedules, lack of access to gyms or areas to exercise, as well as emotional challenges such as anxiety and related feelings that can cause trouble sleeping or impacting someone's ability to exercise and leave their comfort zone.

With that in mind, Bellabeat can develop important customer-centric marketing strategies targeted at the needs and habits of wellness tracker users.

NEXT STEPS

Given the statistics and trends in wellness tracker usage, Bellabeat can take a customer-centric approach to their marketing strategies for their wellness trackers.

In order to cater to users who are interested in developing a healthier sleep schedule and paying attention to this metric in their daily lives, Bellabeat can partner with companies who offer relaxation and meditation with the goal of aiding its customers in experiencing better sleep and lower levels of stress and anxiety. A **partnership** with companies like Calm would allow Bellabeat customers to download and have exclusive access to the Calm app with an extended free trial, or discounted membership prices. In addition, partnerships with companies specialized in therapy services such as BetterHelp could give Bellabeat customers access to a free trial or discounted services, and support customers in their wellness journey from different facets. Partnerships make a multitude of services become easily accessible to customers, give them insight into helpful resources they had not thought of trying before, and adds value to Bellabeat products.

Another step would be to start a **Bellabeat podcast**. The podcast would be focused on wellness and real life stories of women who embarked on a wellness journey to change aspects of their lives or take on new challenges and habits. It would let women tell their personal stories, struggles, and goals, as well as create a community of women starting their personal journeys. The podcast can bring different and easily accessible content such as "Wellness in your 20s", "How to make the most out of your time after work", and more. This shows Bellabeat customers and potential customers how Bellabeat is an all-encompassing company, and give customers a chance to relate to podcast guests and take away tips and advice that they can introduce to their own lives. The podcasts can also be filmed and uploaded to YouTube, Instagram, and TikTok giving Bellabeat an opportunity to create content for multiple platforms all at once.

Lastly, Bellabeat should participate and/or host **events** in major cities. By sponsoring wellness events, Bellabeat can reach different audiences and give participants an insight into the benefits of tracking your daily metrics and understanding your body. If hosting an event, Bellabeat should focus on weekends, holidays, or after work hours to target the most common activity times and welcome a larger public. It could feature mindfulness workshops, bouquet making, workout classes, walking in groups, and more. Through events, Bellabeat gives customers an opportunity to connect with others, exercise, and learn more about how to take care of their minds and bodies.

These steps show that Bellabeat can give women the tools and knowledge of how to be the best version of themselves, by being all-encompassing and going further than "just" offering a tracker device. Bellabeat can connect with customers and meet them where they need help the most.