

Helping Warner Music increasing its market share

With PySpark and Spotify data



WARNER MUSIC GROUP

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Agenda & Management Summary

This report describes the outcome of a Spotify dataset analysis. The potential client is Warner Music Group who wants to increase its market share

1. Background & Goal

2. Deep dive 1: Sign upcoming artists

3. Deep dive 2: Look for music trends

5. Conclusion

4. Deep Dive 3: What makes a hit?

(Additional information included in
Jupyter Notebook)

With the help of PySpark and the Spotify dataset from Kaggle I created a data analysis. My fictional client is Warner Music Group who wants to increase its market share. I found out that the signing of two upcoming reggaeton singers, focusing on the genre “chill” and the creation of energetic sung songs could help Warner Music group to increase its market share.

Background & Goal

Warner Music wants to gain market share by making investing / signing decisions based on Spotify data



WARNER MUSIC GROUP Warner Music Group Corp. (WMG) is an American multinational entertainment and record label conglomerate headquartered in New York City. It is one of the "big three" recording companies and the third-largest in the global music industry, after Universal Music Group (UMG) and Sony Music Entertainment (SME) [1].



Spotify is a Swedish audio streaming and media services provider, launched in October 2008. The platform is owned by Spotify AB, a

publicly traded company on the New York Stock Exchange since 2018 through its holding company Spotify Technology S.A. With Spotify, people can stream music and play millions of songs, podcasts from all over the world [2],[3].

Warner Music has asked me to analyze Spotify data from the past to get insights and afterwards invest in artists and genres. I will use historic Spotify data ranging from 1920-2021. The tool used to analyze the data will be PySpark.

Based on the needs of Warner, I will look at the revenue growth potentials:

- 01 Sign upcoming artists**
We want to check if there are promising uprising artists that can be signed to grow together.
- 02 Look for music trends**
We want to find musical trends so that Warner can adapt its product portfolio to it.
- 03 What makes a hit?**
We want to see what the most popular songs make so successful.

Deep dive 1: Sign upcoming artists

I propose to sign Jay Wheeler and Justin Quiles. They have created songs with high popularity but still have relatively low monthly listeners

Analysis

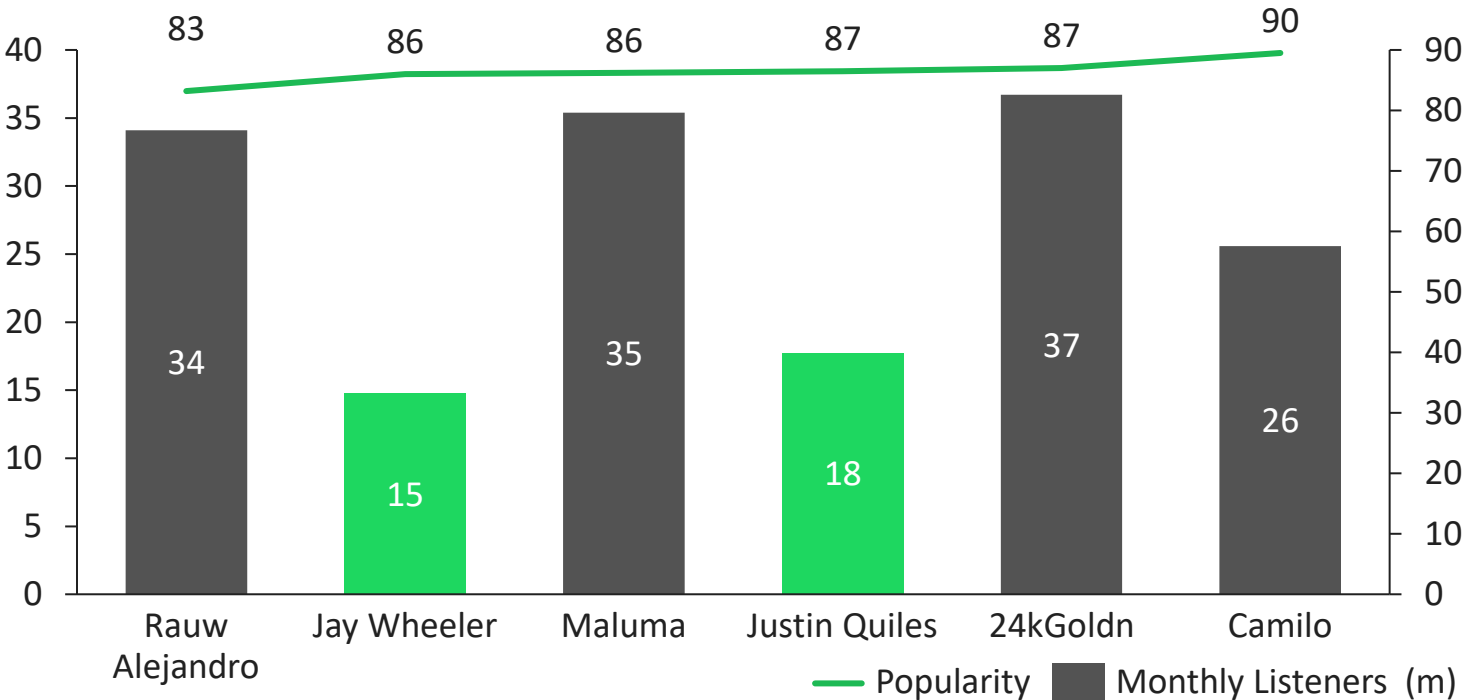
I conducted an analysis based on the average popularity of released songs by artists in 2020 and 2021. I filtered out artists who only have published one song during this period to make sure that Warner Music does not sign one-hit wonders.

Popularity: The popularity of a track is a value between 0 and 100, with 100 being the most popular. The popularity is calculated by algorithm and is based, in the most part, on the total number of plays the track has had and how recent those plays are [1].

Monthly listeners: Monthly listeners are unique listeners who play your music during a 28-day period [2].

Conclusion

Jay Wheeler and Justin Quiles created very popular songs but still have a relatively low fan base. I assume that these artists will gain more traction within the next month which leads to increased revenue / market share.



Jay Wheeler
Puerto Rican singer and songwriter.



Justin Quiles
American reggaeton singer

[1] [Spotify API](#), [2] [Spotify FAQ](#)

Deep dive 2: Look for music trends

There is a trend towards more danceable, instrumental, acoustic genres. Warner Music should invest in the main genre “chill”

Analysis

I conducted an analysis based on the average traits of released songs within the last 5 years. We can see that high danceability and energy have been two important factors within the last 5 years.

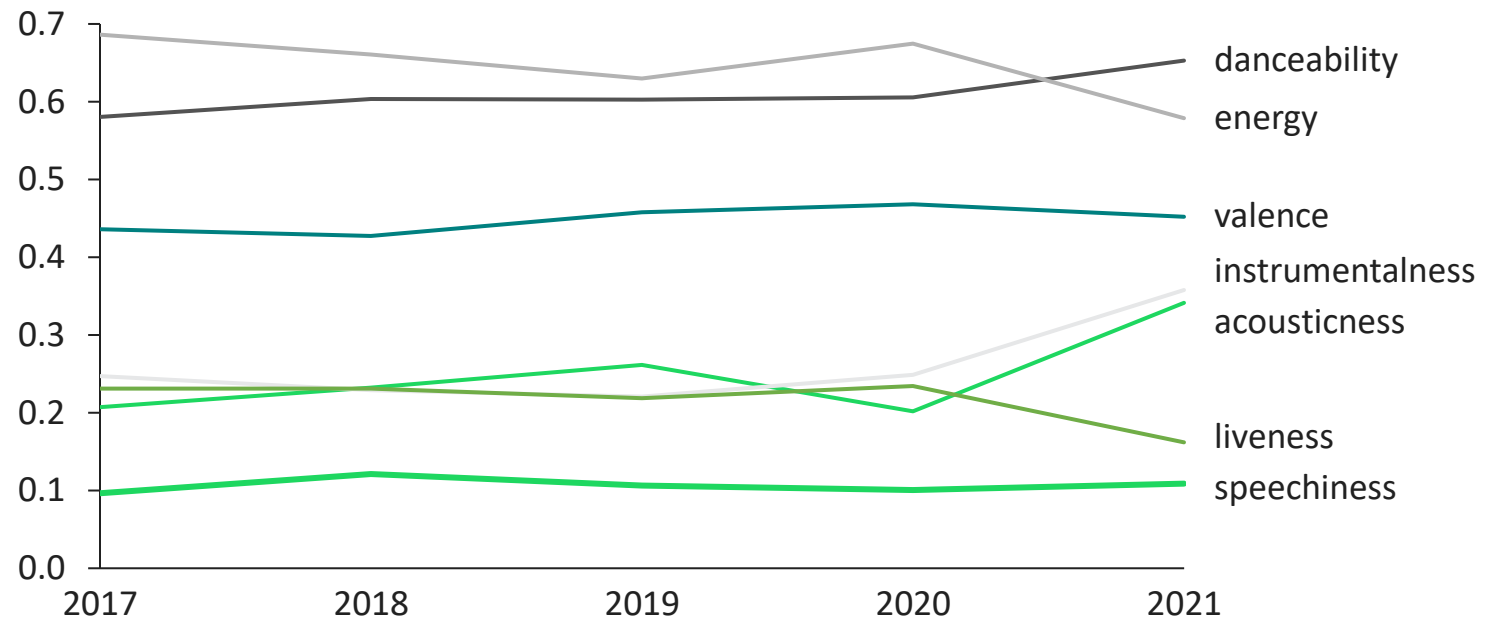
Valence remained stable which means there was not a change in positiveness. Instrumentals, acousticness, and liveness have been low within the last years.

Speechiness remained low which means there haven't been uploaded much more podcasts etc.

However, we see some changes from 2020 to 2021.

Conclusion

Within 2021, there has been a trend towards more music which is more danceable, instrumental, acoustic. Liveness and energy is not that important anymore. Based on these trends I propose to invest into these genres:



Chill

- Chillhop
- Deep chill
- Lo-fi beats
- Electronica

Explanation

All these genres have higher values in the upward trends and lower values in the decreasing trends.

Deep Dive 3: What makes a hit?

Hits in 2021 are less danceable but very melodic

Analysis

	acousticness	danceability	energy	instrumentalness	valence	liveness	speechiness	popularity
top 5%	0.33	0.62	0.62	0.00	0.49	0.18	0.08	64.25
% change	-3.74	-5.73	6.94	-99.73	9.40	9.59	-23.91	726.29
average	0.34	0.65	0.58	0.36	0.45	0.16	0.11	7.78
lowest 5%	0.24	0.67	0.66	0.33	0.50	0.17	0.11	0.00
% change	-0.29	0.03	0.13	-0.07	0.11	0.04	-0.01	-1.00

To find out what makes a hit and what doesn't in 2021, I calculated the average values for the traits respectively for the entire subset, and the 5% top and lowest in popularity.

Danceability: The average of danceability within the top 5% is 5% lower than average. This could make sense because of the pandemic these songs are less played.

Instrumentalness: It seems like that hits in 2021 are not instrumental at all. This means vocal content is crucial to create a hit.

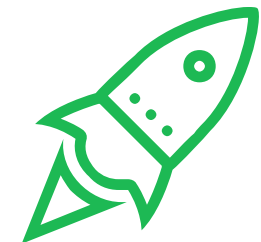
Speechiness: Inserting speech (e.g., conversation parts but also rap) seems like contradicting the chances of creating a hit.

Conclusion

If you want to create a hit in 2021, you should focus on sung vocals. Danceability is not that important but you should add some energy.

Most popular

1. Olivia Rodrigo – driver license
2. Justin Bieber – Anyone
3. Ariana Grande – 34+35 Remix
4. Juice WRLD – Bad Boy





Conclusion

With the help of data and PySpark, we could derive clear actions to increase Warner Music's market share

Based on the Spotify data analysis I recommend the following:

- 01** **Sign upcoming artists**
I propose to sign Jay Wheeler and Justin Quiles. They have created songs with a popularity but still have relatively low monthly listeners.
- 02** **Look for music trend**
There is a trend towards more danceable, instrumental, acoustic genres. Warner Music should invest in the main genre "chill".
- 03** **What makes a hit?**
Hits in 2021 are less danceable but very melodic.

Next steps:

-  Run more sophisticated models with Spark ML to get even more insights
-  Run GraphX analyses to check how features could influence our artists popularity
- Cross validate the results with another dataset from Spotify





Thanks!

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