# Implementing business strategies through YT Statistics
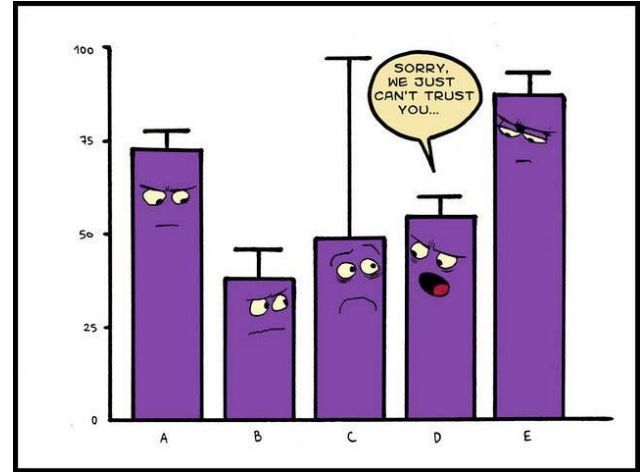
Daniel Setiawan
NYC Data Science Academy, 11/18

# Why YouTube?

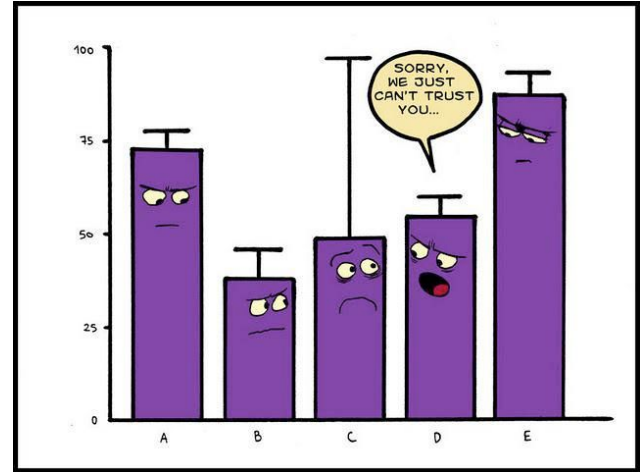Exposure to information / content that I normally wouldn't have.

Correlate trending statistics to patterns in marketing and energy.

# Basic Statistics

2nd highest website traffic;
37% mobile dominance

Data from 1.8B users / month
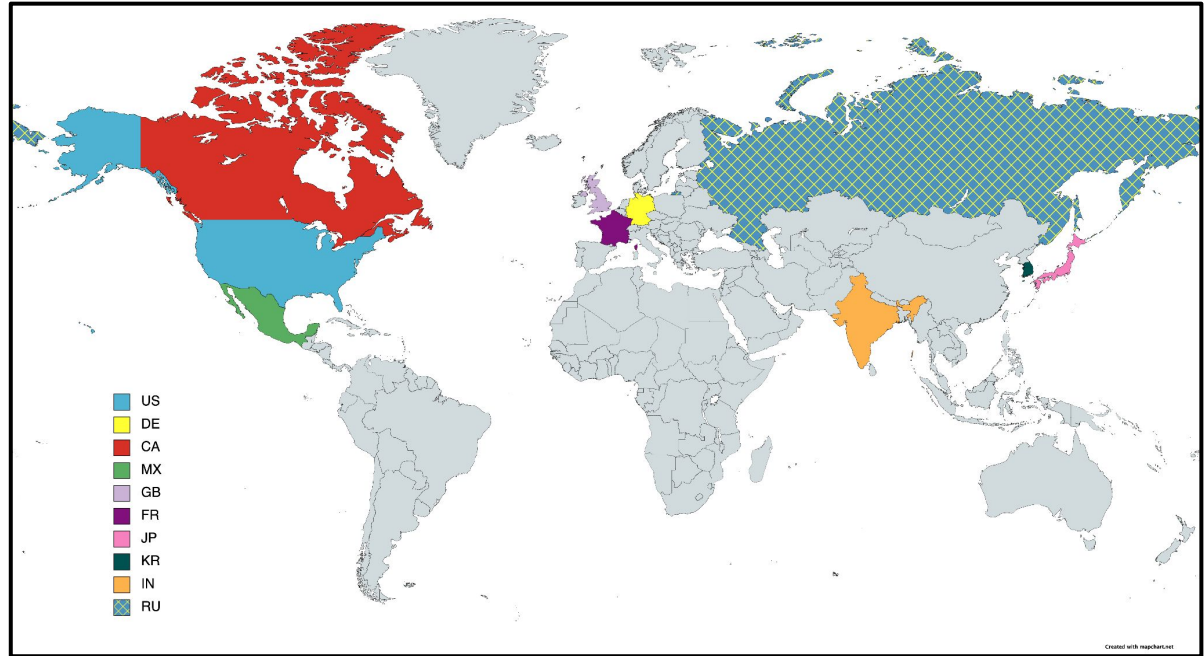provide insight of human behaviors

# About the data:

YouTube Trending Videos

11 datasets.

10 countries.

8 months.

~400K observations.



| | |
|---|---|
| US | |
| DE | |
| CA | |
| MX | |
| GB | |
| FR | |
| JP | |
| KR | |
| IN | |
| RU | |

Created with mapchart.net

# Key Objectives

**Effective Marketing**

Which region will provide the highest ROI for online advertisements?

What marketing is most effective for consumers with different interests?

**Energy Consumption**

When are consumers more likely to shop online for products they don't need?

What infrastructure requisites are necessary for data center upkeep?

**Exploratory Analysis**

How do we use viral data to predict consumer buying trends?

Which products are consumers are likely to buy based on their interests?

# Before we get started...

I'll be using the word *consumer* a lot.

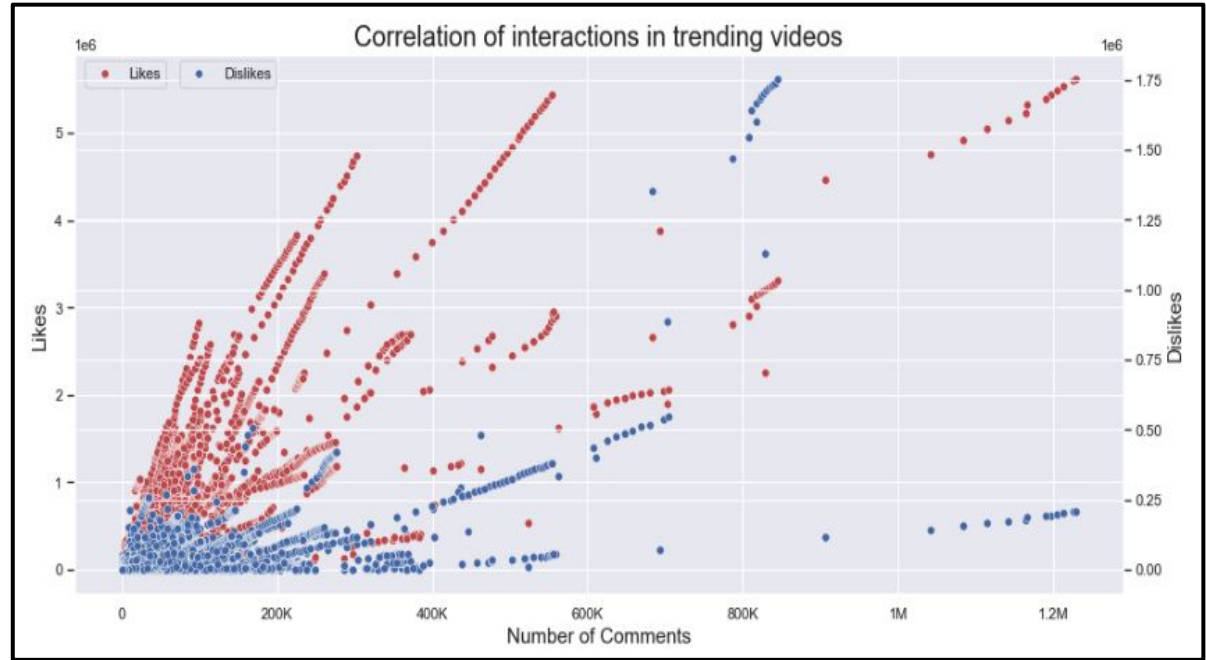Viewers are consumers.

Content is the product.

Digital currency is time.

# Effective Marketing:

The voice that powers the product

Product marketing should utilize data to understand how engaged people will be based on their opinion.



Correlation of interactions in trending videos

*Analyzing video engagement lets you predict consumer opinions*

# Effective Marketing:

The voice that powers the product

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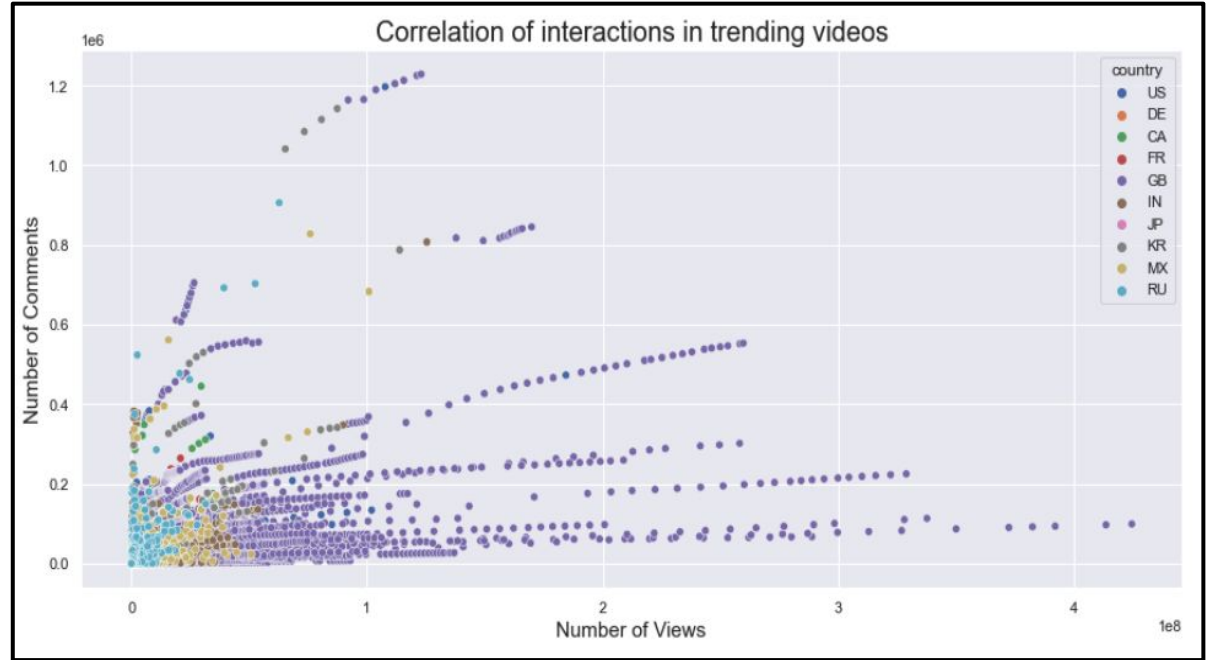
Engagement rates vary by region, and should be taken into account when calculating strategies.



Correlation of interactions in trending videos

*Analyzing video engagement lets you predict consumer opinions*

# Effective Marketing:

The instant gratification dilemma

Consumers have different attention thresholds based on their interests.

Headline and description count play a crucial role in successful product marketing.



Title Length of Trending Videos
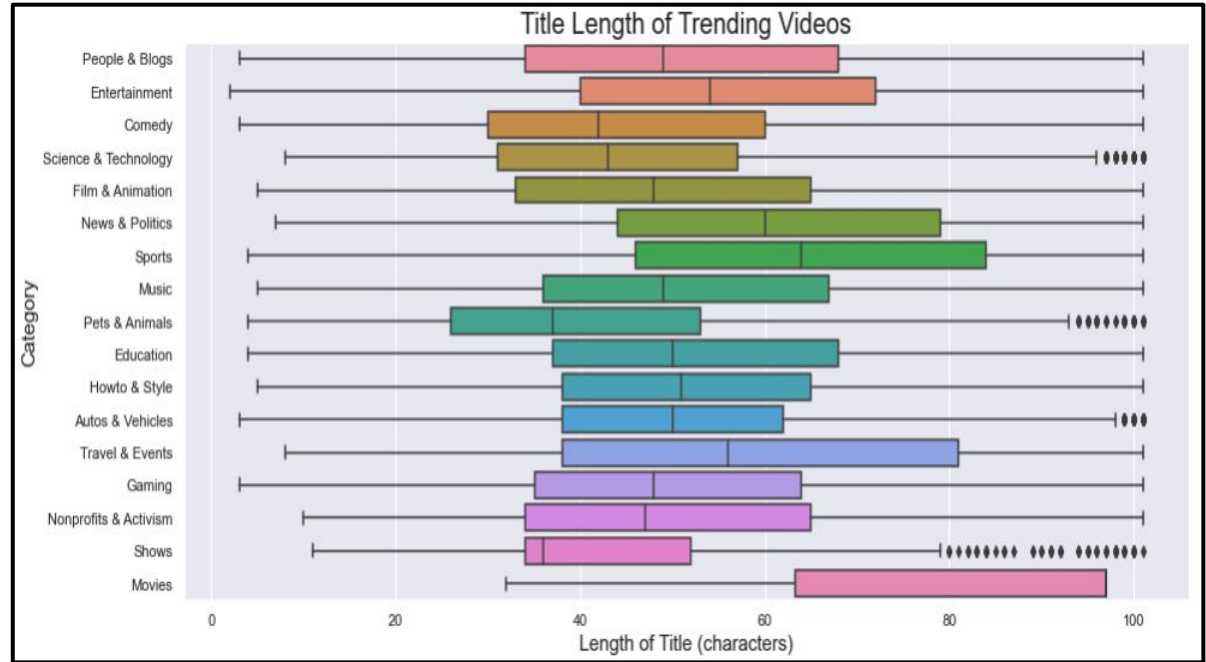
*Successful video titles can give a company insight on improving their product marketing.*

# Effective Marketing:

The goldilocks of product marketing

Consumers have different attention thresholds based on their interests.

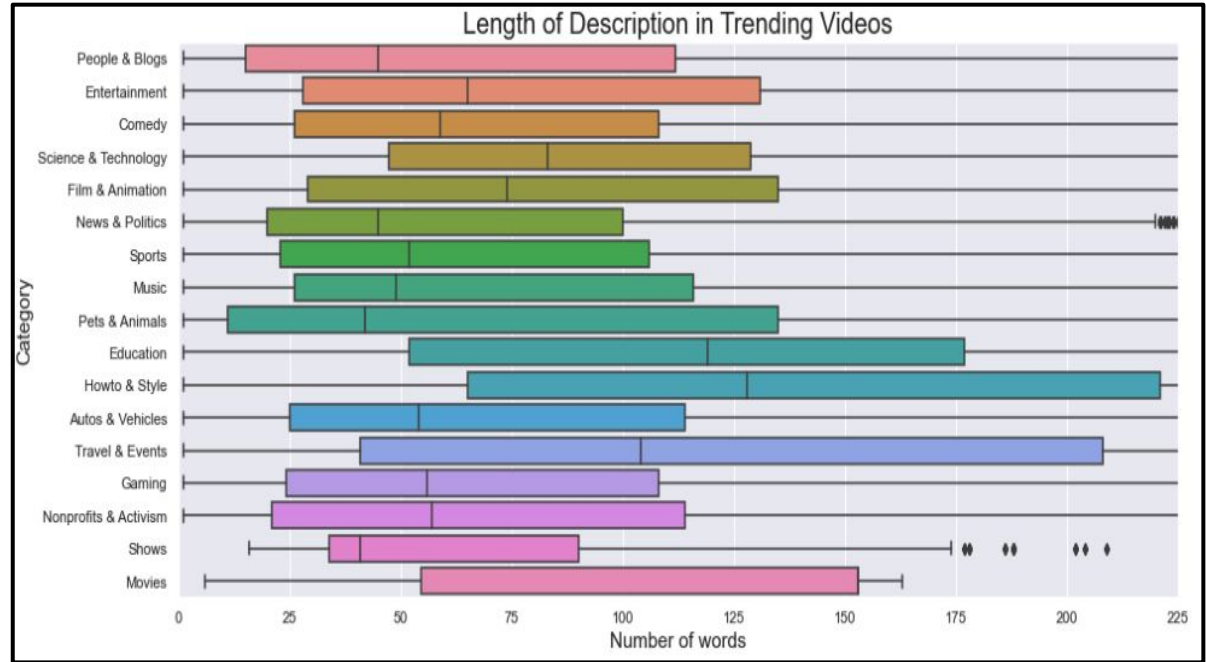Headline and description count play a crucial role in successful product marketing.



*Pairing data with non-trending videos could allow us to gauge how consumers react to certain categories*

*Successful video titles can give a company insight on improving their product marketing.*

# Energy Consumption: Bandwidth usage and consumer habits

Online ads can aim to target viewers during peak times in the day when they're most relaxed.

Data centers can make decisions on which days will have the least impact during equipment maintenance.



Energy Usage by Hour

*Relaxed consumers are 12% more likely to spend money on products they don't need.*

# Energy Consumption: Bandwidth usage and consumer habits

Online ads can aim to target viewers during peak times in the day when they're most relaxed.

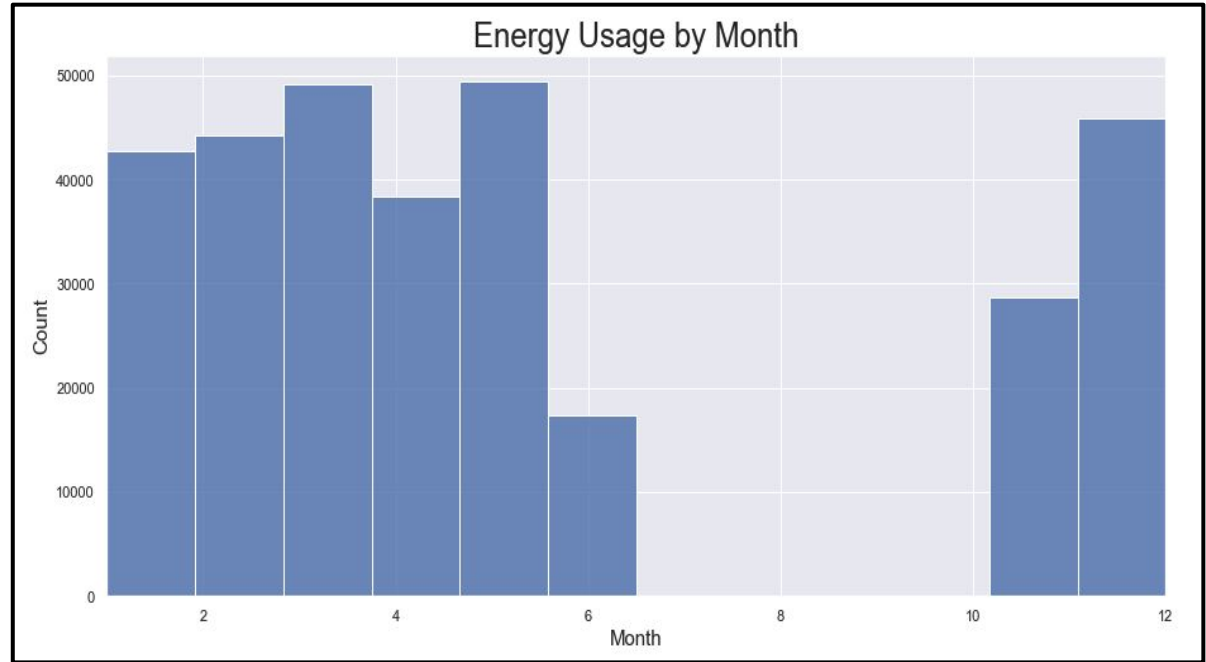Data centers can make decisions on which days will have the least impact during equipment maintenance.



Energy Usage by Month
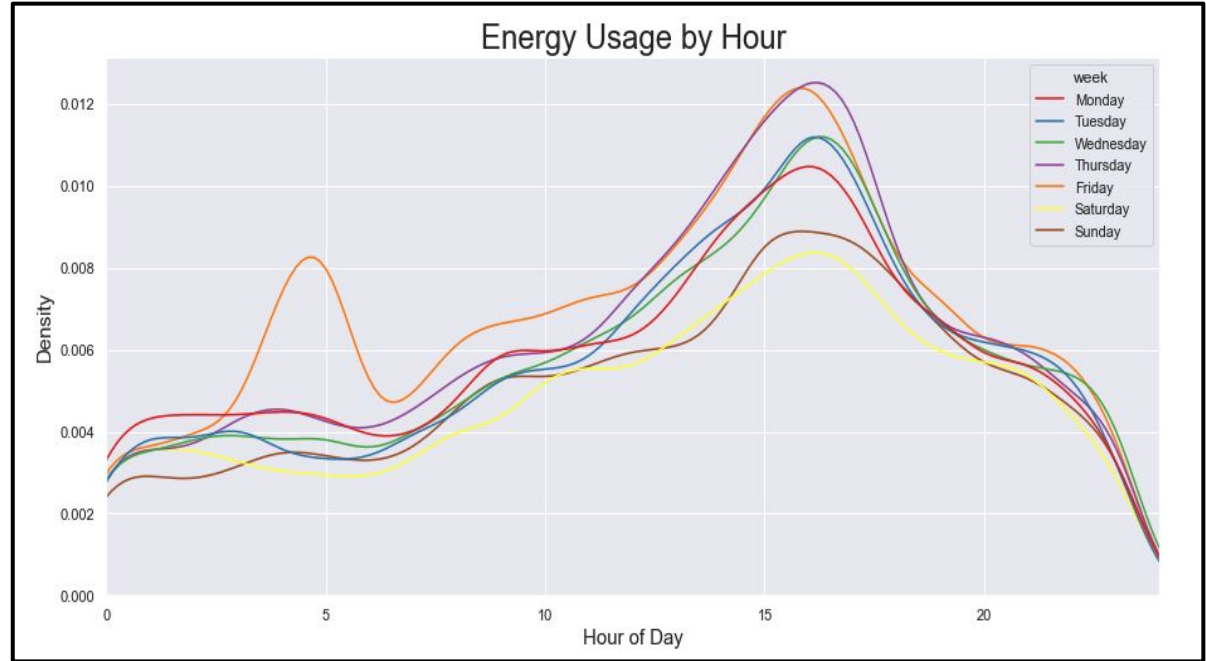
*July - October Data unavailable*

*Relaxed consumers are 12% more likely to spend money on products they don't need.*

# Energy Consumption: Targeting the global audience

Data centers in France should be equipped to handle the high energy influx during peak hours.

Products targeting asian consumers should take into account their inactivity during normal peak hours.
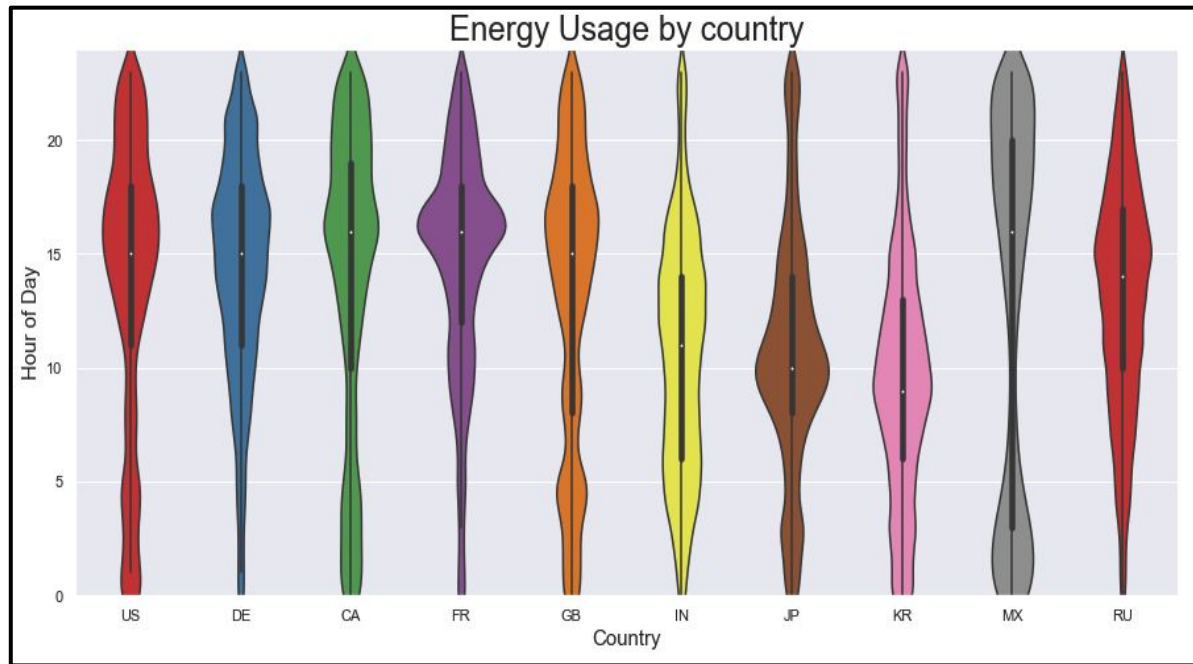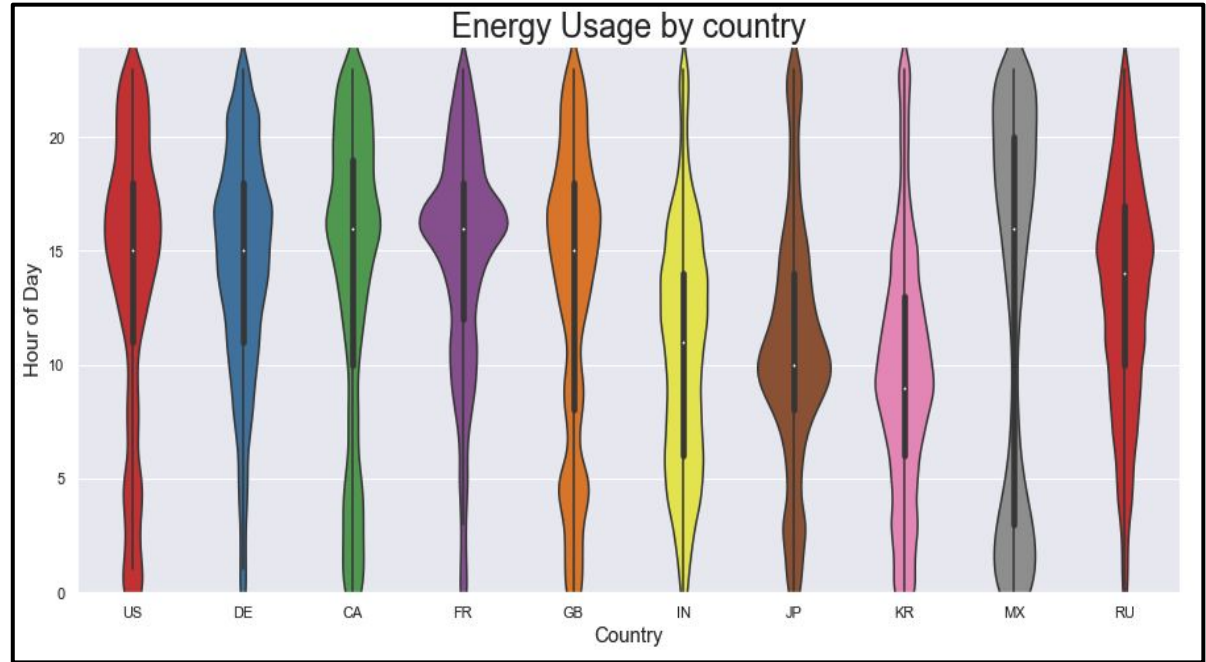


Energy Usage by country

*Hour of Day* vs *Country* (US, DE, CA, FR, GB, IN, JP, KR, MX, RU)

*\* July - October Data unavailable*

*Understanding how energy usage differ lets you make smart business decisions.*

# Energy Consumption: Targeting the global audience II

Indian power grids is more vulnerable to overheating and should use more resilient parts.

News and social media are less used during the daytime in Mexico.



Energy Usage by country

*July - October Data unavailable*

*Understanding how energy usage differ lets you make smart business decisions.*

# Exploratory Analysis: Growth at an annual scale

Consumers are more glued to their phones during late night in 2018 as opposed to 2017

This may be the optimal time slot for online ad companies to market their product.



Energy Usage by Year

*Y-axis: Density, X-axis: Hour of Day, Legend: year 2017 (red), 2018 (blue)*
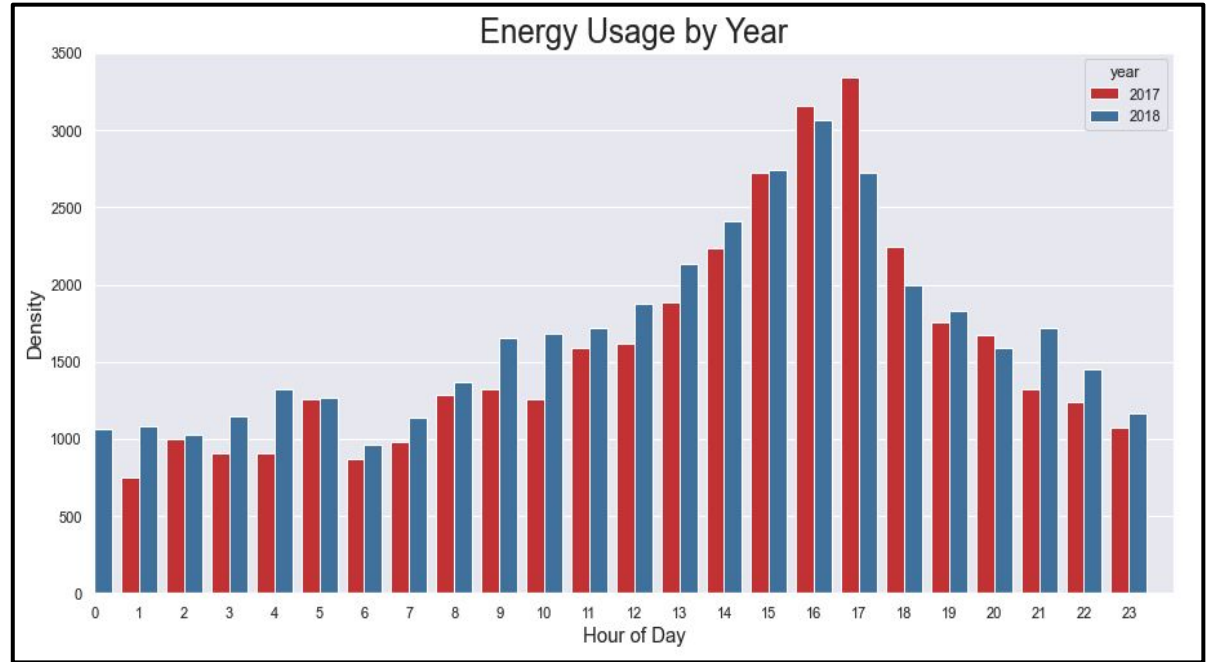
*\*\* Data is normalized to reflect the number of months*

*Analyzing annual trends can help predict how dependent consumers are in phones/technology.*

# Exploratory Analysis: Deconstructing spending habits

Affiliated Marketing should target those in the entertainment industry for highest ROIs.

Scraped Amazon Links:

50% electronics,     17%
home goods,           8%
Beauty / DIY



Categories selling Amazon Products
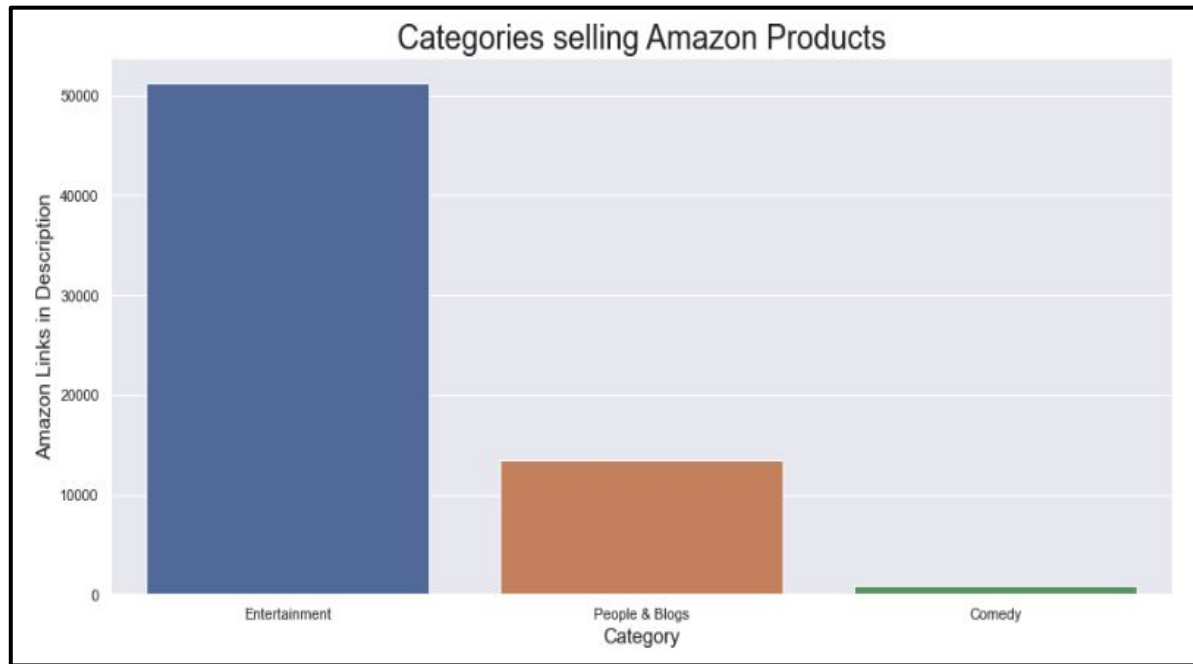
*Electronic ads are most effective in the entertainment industry.*

# Conclusion

**Effective Marketing**

Great Britain has the highest engagement, meaning they could be a good product to target.

**Energy Consumption**

Hardware used in data centers should be more resilient in India and Japan as opposed to the rest of the world.

**Exploratory Analysis**

Technology product companies should advertise most to entertainment influencers.

# If I had more time…

- Find other datasets/observations to support trend hypothesis. See usage impact of CoVID-19.

- Scrape more than just Amazon links: find out which categories are most advertised.

- Compare trends from parallel social media platforms, including TikTok and Instagram.

**What impact did CoVID have in consumer demand?**

**What's the dominating marketplace platform for each category?**

**How do interests vary across platforms and age groups?**