DATA ANALYSIS PORTFOLIO

PREPARED BY

Professional Background

I hold a B.Tech (honors) degree in Quantity Surveying from the Federal University of Technology, Akure, Ondo State, Nigeria with a CGPA of 4.25/5.00. I was opportune to work on some multi-million dollar projects for both local and international clients (including the Proposed Laboratory for AFREXIM Bank presently under construction in Ogun State, Nigeria). I am a member of the Nigerian Institute of Quantity Surveyors (NIQS) and Quantity Surveyors Registration Board of Nigeria (QSRBN) which regulate the Quantity Surveying practice in Nigeria.

The highlight of my career so far beyond being able to manage projects and deliver them in time and within budget was the advice given by my team sometimes in 2019 to a client, to domicile the monies intended for the execution of a proposed project in the United States Dollar (USD) to hedge against currency exchange risk,

I am skilled in grooming team members, Microsoft Office (Project, Word, Excel, Project), Autodesk (AutoCAD, Navisworks), etc.

I have however been fascinated with the possibility of data analysis used for making informed decisions and hence my interest in data analysis.

Portfolio Outline

Udemy Project Description

- As Data Analyst for Udemy, I was tasked by my manager to present the data on course revenue to understand and identify opportunities to increase revenue, monitor the performance of the different courses, and identify the most popular of all the courses.

Methodology

- I have studied consumer subscription trends obtained from Udemy between the years 2011 and 2017 over four (4) different subject areas. The data was adjusted for duplicates, blank cells expunged and inconsistent data adjusted using google sheets. The clean data was analyzed using Tableau to create necessary visuals. The study aims to identify possible revenue increase opportunities and track performance on the following topics; Web Development, Graphic Design, Business Finance, and Musical Instruments.

Result/Conclusion
- The provided data shows that Web Development is the most popular of all the subjects and also provided the highest revenue.
- There are potential opportunities to increase revenue further in web development considering that it was responsible for most of the revenue generated between 2014 and 2017.
- Reviews from the different subscribers may help to promote web development courses and further drive up revenue.

The Problem

- The business problem to understand and measure the performance of the different courses provided on the Udemy website, identify opportunities for further revenue growth and identify the most popular subject area subscribers have found interesting. The data analysis is expected to be provided within three (3) weeks.

- Data from the following topics; Web Development, Graphic Design, Business Finance, and Musical Instruments will help in providing requisite information. The data is provided in descriptive, tabular, and pictorially to enable its understanding.

- The analysis seeks to understand the subject with the total number of subscribers, the subject with the highest price, and the subject with the highest number of positive reviews to understand the performance of the respective subjects.

Data Design

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The study aims to identify possible revenue increase opportunities and track performance on the following topics;

Web Development, Graphic Design, Business Finance, and Musical Instruments.

The analysis showed that WEB development has the highest revenue and performed better than the other subject area.

I have used Tableau for the visualization of the data because it is more suitable for handling large data sets and it can provide a very detailed analysis.

Findings

Finding 1

Table 1: Total Subscriptions by Subject

According to the provided data on the different course titles, the largest percentage (67.87%) of the subscribers enrolled in Web Development. The total number of subscribers is 7,981,935.

subject	SUM of num_subscribers
Business Financ	1868711
Graphic Design	1063148
Musical Instrume	846689
Web Developme	7981935
Grand Total	**11760483**

Finding 2

The result of the analysis revealed that Web Development has the highest average reviews.

Figure 1: Average Review by Subject

AVERAGE of num_reviews vs. subject
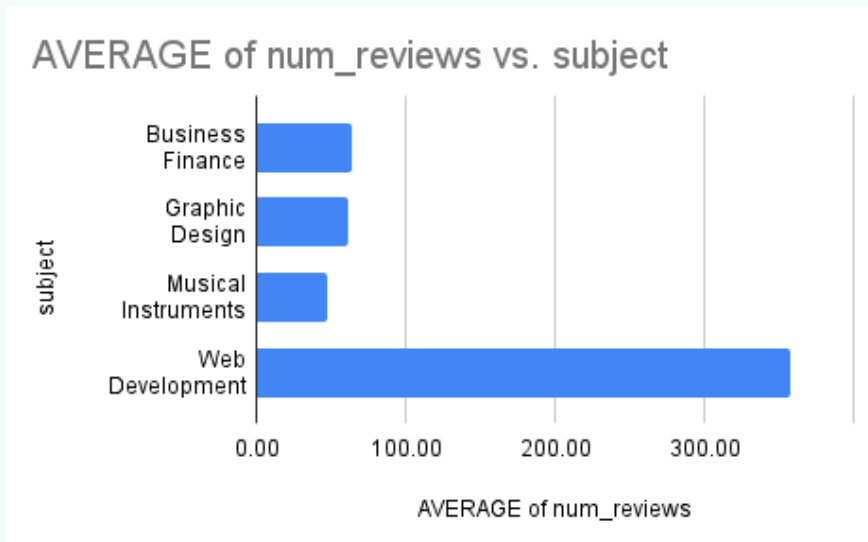
Finding 3

The analysis showed that Web Development has the highest average price compared to the other subjects.

Figure 2: Average Price by Subject

AVERAGE of price vs. subject
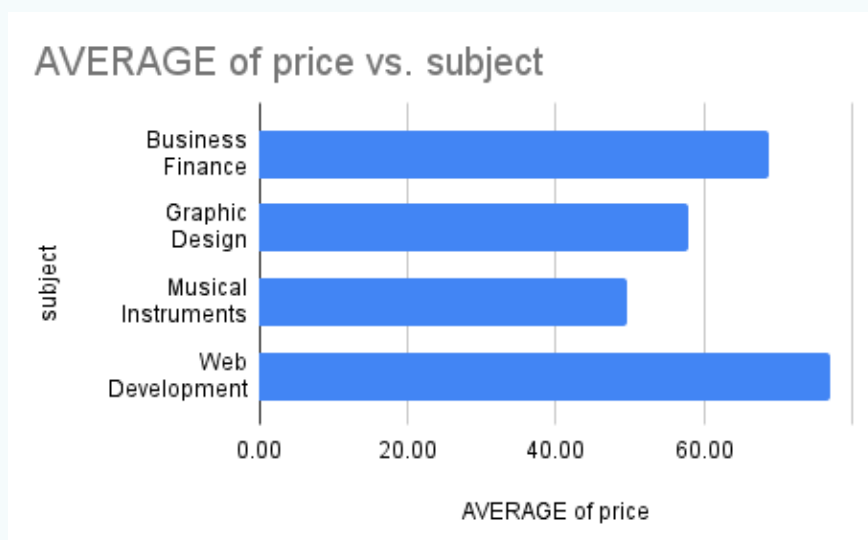
Finding 4

The table below shows the distribution of the respective subjects across the relevant skill levels. This table shows the distribution of the skill levels across All Levels, Beginners Levels, Expert Levels, and Intermediate levels.

Figure 3: Levels by Subject

Levels vs subject

Sum of Num Subscribers and % of Total Num Subscribers for each Subject broken down by Level. Color shows details about Subject.
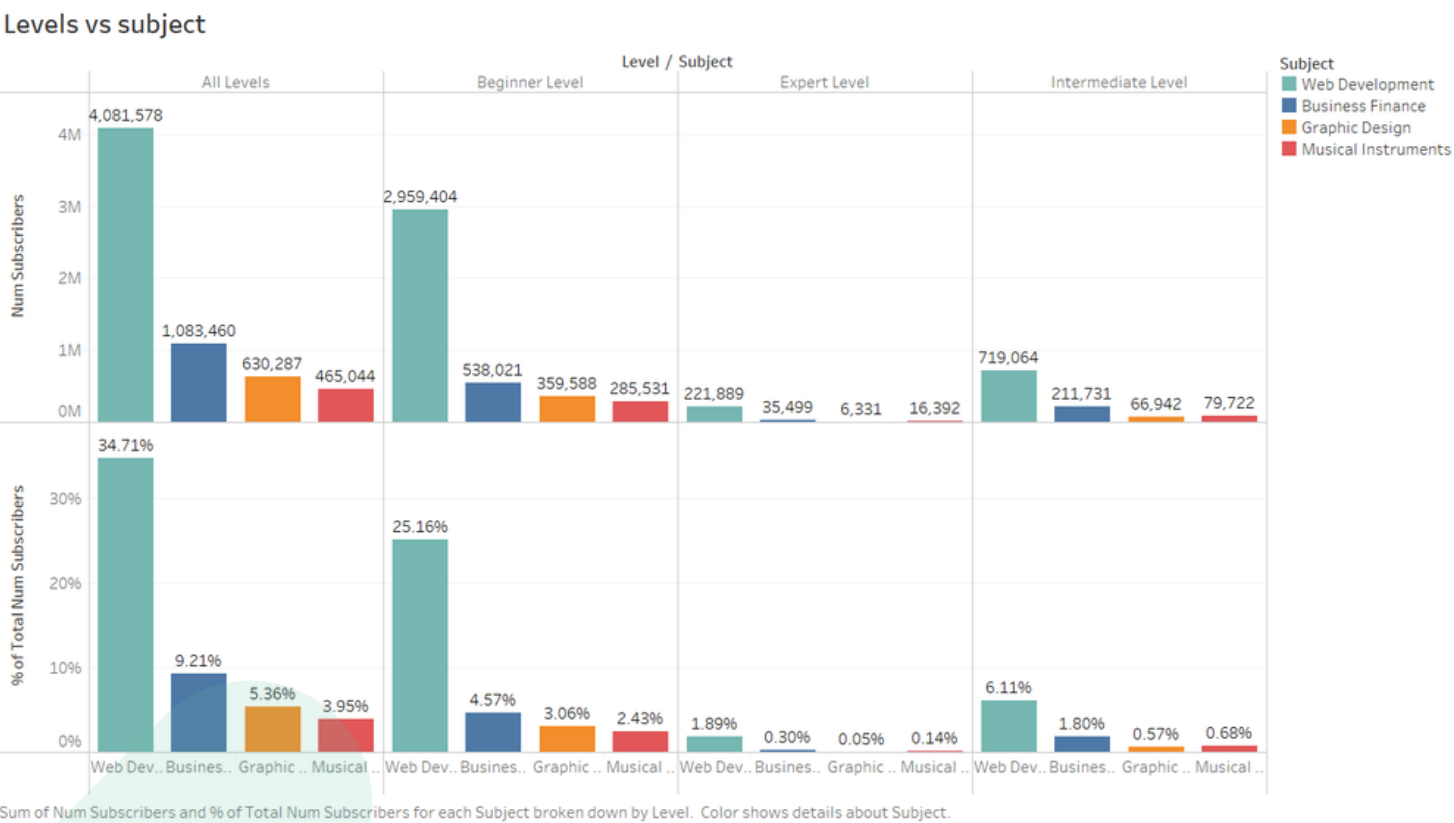
Finding 5

This table shows that Web Development has the highest percentage of free and paid courses at 47.52% and 20.35% respectively.

Figure 4: Free/Paid by Subject

Free/paid vs subject

Sum of Num Subscribers and % of Total Num Subscribers for each Subject. Color shows details about Free/Paid.

Analysis

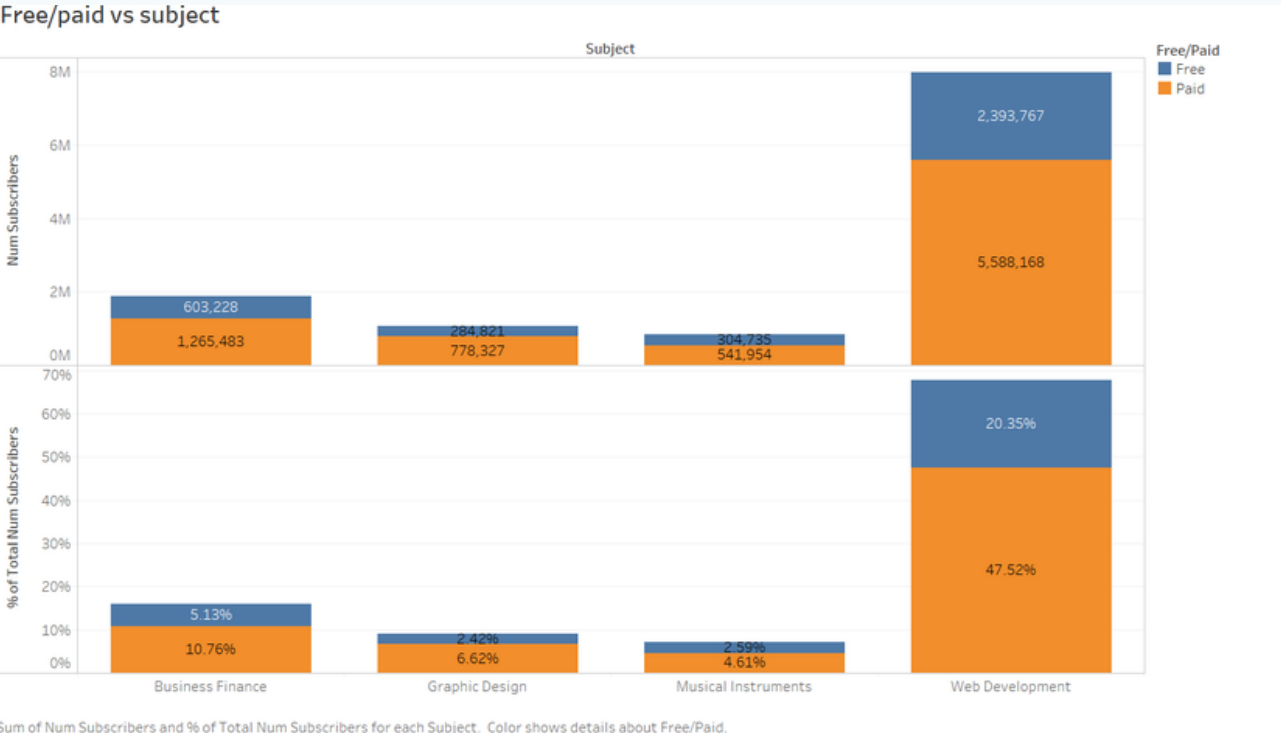My initial insight from the data is that Web Development would record the highest number of subscribers among the different subjects being considered because I consider it to be the most popular of all the subject areas.

My inferences include a possible reduction in revenue because most of the courses under Web Development are offered for free, and the courses under Web Development have fewer reviews to encourage subscribers to enroll for courses related to Web Development.

The essence of the 5 why analysis is to establish the root cause of the identified problems and fix them. The number of questions asked enabled the establishment of the root cause of the identified problem.

The analysis results suggested that there is an opportunity to increase sales across the different regions.

Analysis

Whys analysis

The Four Subject Areas

Problem: Reduction in sales

01

Why?

Why? Courses are too expensive

02

Low number of subscribers

Why?

03

Lack of awareness / Inadequate marketing

Why?

04

Most of the courses are at an advanced level

Conclusion

- There are potential opportunities to increase revenue further in web development considering that it was responsible for most of the revenue generated between 2014 and 2017.
- There may be a need to determine the total profit vis-à-vis the number of subscribers enrolled for the different subjects.
- Reviews from the different subscribers may help to promote web development courses and further drive up revenue.
- The provided data shows that Web Development is the most popular of all the subjects and also provided the highest revenue.

Capstone Project Description

- Since it may be impossible to get data that is perfect, I have decided to analyze the Video Games Sales as provided. I did a quick review of the data, identified some problems, intuitively determine the likely cause of the problems and possible impact on the stakeholders albeit with an open mind, and analyzed the provided data to confirm or contrast my hypothesis. My hypothesis included a reduction in video game sales, loss of profit, high cost of video games, etc.

Methodology

- I have studied users ranking on video game sales over different genres with recorded sales of over 100,000 copies. The data were checked for duplicates, blank cells expunged and inconsistent data adjusted using google sheets. However, the global sales were inconsistent and adjusted accordingly. The clean data was analyzed using Tableau to create necessary visuals.

- The study aims to establish user rankings and track performance on video game sales, establish which of the regions generated the highest revenue, and identify possible revenue increase opportunities.

Result/Conclusion
- Attractive marketing and endorsement from celebs may help drive up sales of video games, particularly the genres that have shown to be interesting to the market.
- The publishing of games through Nintendo drives up prospective video game sales as 89.19% of the top 20 games have been through Nintendo.

Data Design

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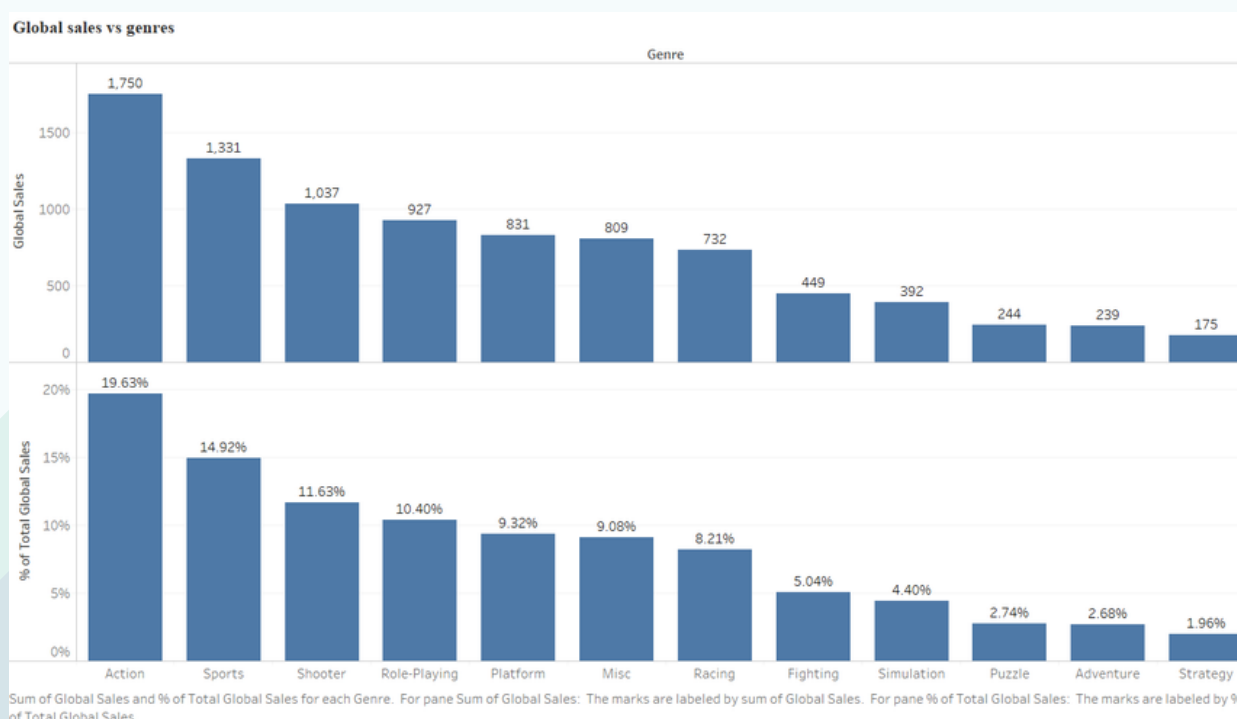
Findings

Finding 6

Table 2: Total Sales by Genres

The data show that the Action genre recorded the highest sales across North America, Europe, Japan, Other sales, and the overall global sales respectively.

Genre	SUM of NA_Sale	SUM of EU_Sale	SUM of JP_Sale	SUM of Other_S	SUM of Global_S
Action	877.83	525.00	159.95	187.38	1750.16
Adventure	105.80	64.13	52.07	16.81	238.81
Fighting	223.59	101.32	87.35	36.68	448.94
Misc	410.24	215.98	107.76	75.32	809.30
Platform	447.05	201.63	130.77	51.59	831.04
Puzzle	123.78	50.78	57.31	12.55	244.42
Racing	359.42	238.39	56.69	77.27	731.77
Role-Playing	327.28	188.06	352.31	59.61	927.26
Shooter	582.60	313.27	38.28	102.69	1036.84
Simulation	183.31	113.38	63.70	31.52	391.91
Sports	$683.35	$376.85	$135.37	$134.97	1330.54
Strategy	68.70	45.34	49.46	11.36	174.86
Grand Total	**$4,392.95**	**$2,434.13**	**$1,291.02**	**$797.75**	**8915.85**

Figure 5: Global Sales by Genres

Sum of Global Sales and % of Total Global Sales for each Genre. For pane Sum of Global Sales: The marks are labeled by sum of Global Sales. For pane % of Total Global Sales: The marks are labeled by % of Total Global Sales.

Finding 7

Figure 6: Average Global Sales by Genres

The data show that the Platform genre recorded the highest average global sales. The platform has the highest average global sales of 0.938 million.

Genres vs Average global sales

Genre	Avg. Global Sales
Action	0.5278
Adventure	0.1857
Fighting	0.5294
Misc	0.4654
Platform	0.9380
Puzzle	0.4200
Racing	0.5859
Role-Playing	0.6232
Shooter	0.7915
Simulation	0.4520
Sports	0.5672
Strategy	0.2568

Average of Global Sales for each Genre. The marks are labeled by average of Global Sales.
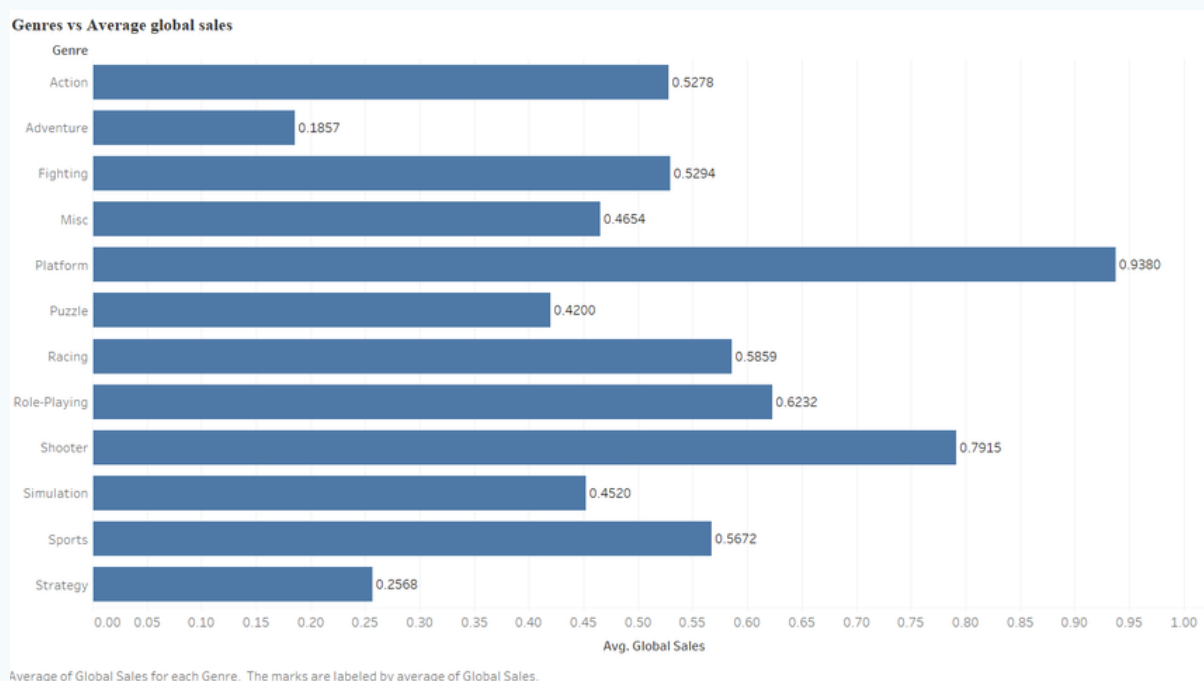
Finding 8

Figure 7: Yearly Global Sales

The data show that the highest global sales were recorded in the year 2008.

Yearly global sales

Year	Global Sales
Null	100.0
1980	11.4
1981	35.7
1982	28.9
1983	16.8
1984	50.4
1985	54.0
1986	37.1
1987	21.7
1988	47.2
1989	73.5
1990	49.4
1991	32.2
1992	76.1
1993	46.0
1994	79.2
1995	88.1
1996	199.2
1997	201.1
1998	256.3
1999	251.1
2000	201.6
2001	331.5
2002	395.0
2003	357.6
2004	418.8
2005	459.4
2006	520.5
2007	610.4
2008	678.5
2009	667.1
2010	600.4
2011	515.9
2012	363.3
2013	368.0
2014	337.1
2015	264.3
2016	70.9
2017	0.1
2020	0.3

Sum of Global Sales for each Year. The marks are labeled by sum of Global Sales.

Finding 9

Figure 8: Global Sales by Platform

The data show that the highest sales were recorded on the PS2 platform globally.

Platform vs Global sales

Sum of Global Sales for each Platform. The marks are labeled by sum of Global Sales.
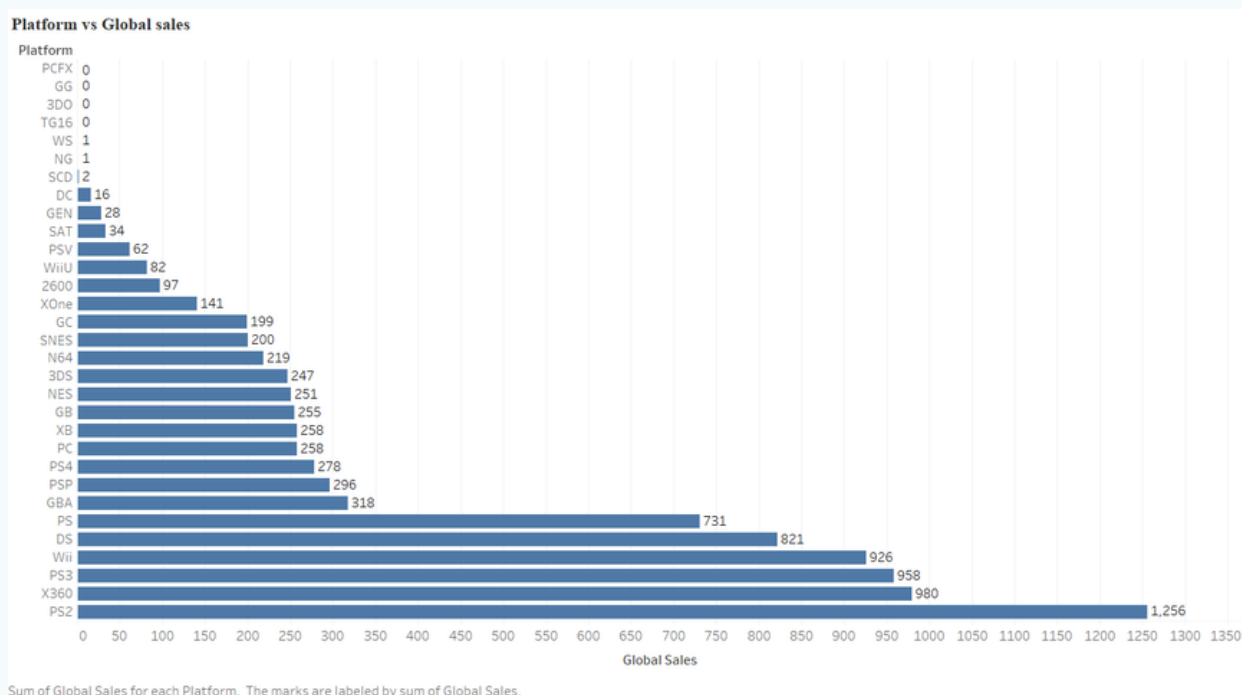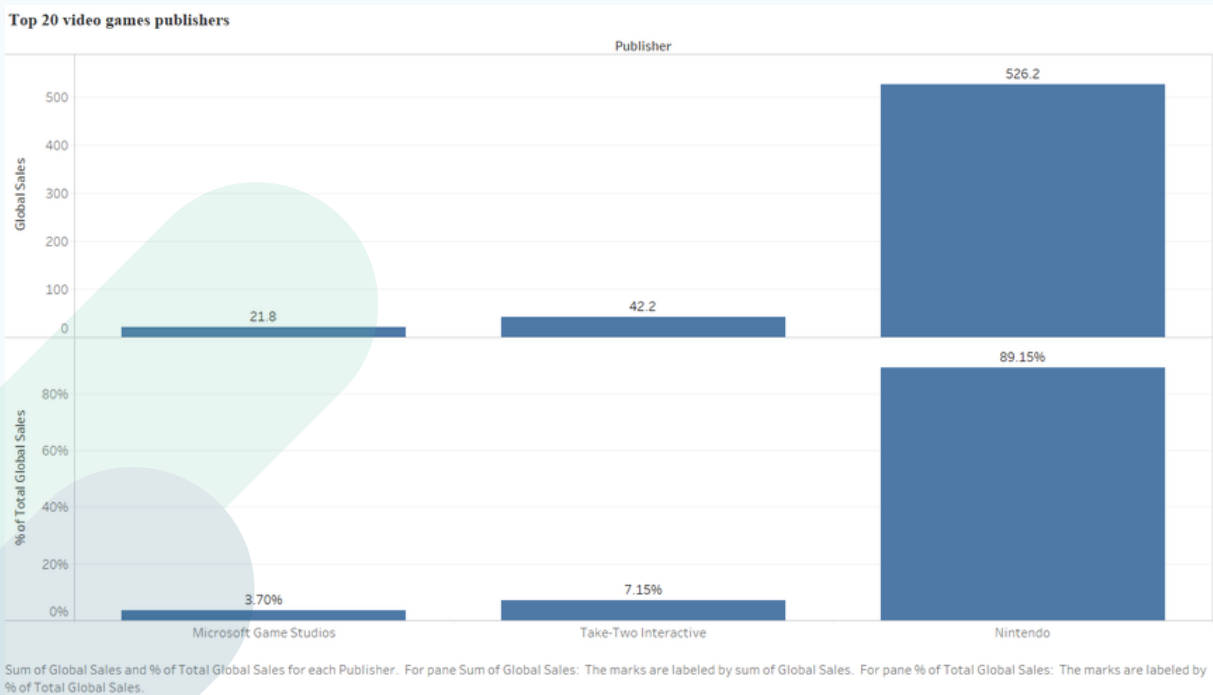
Finding 10

Figure 9: Top 20 Video Games Global Sales

The data show that the sports genre ranked highest in global sales among the top 20 video game sales globally.


Top 20 video games global sales

Sum of Global Sales and % of Total Global Sales for each Genre. For pane Sum of Global Sales: The marks are labeled by sum of Global Sales. For pane % of Total Global Sales: The marks are labeled by % of Total Global Sales.
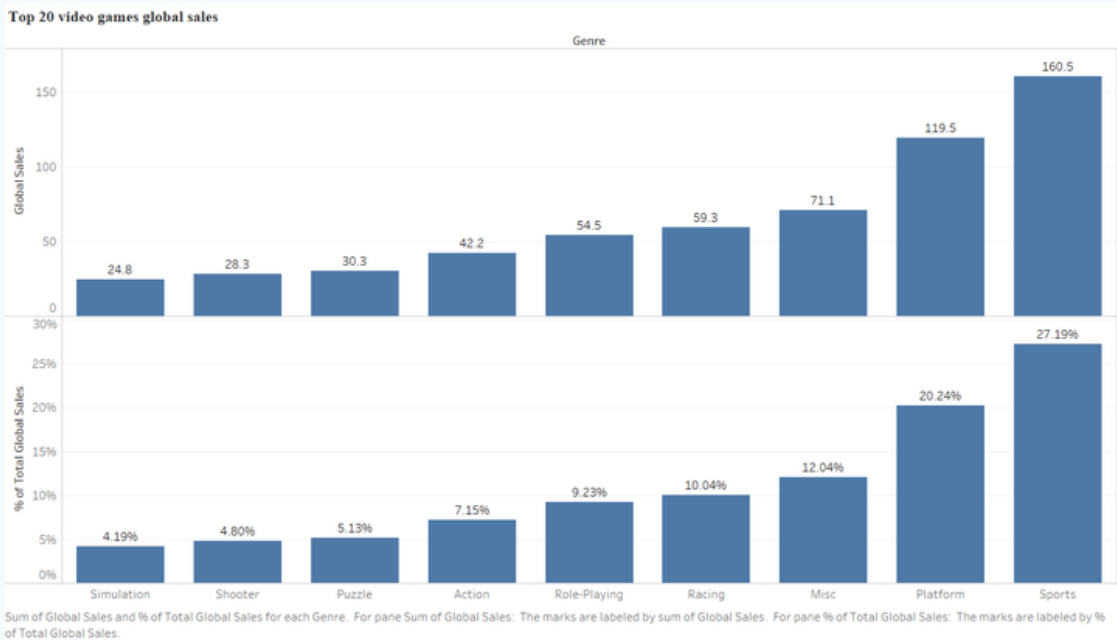
Finding 11

Figure 10: Top 20 Video Games Global Sales

The data show that Nintendo published 89.15% of the top 20 video games globally.

Top 20 video games publishers

Sum of Global Sales and % of Total Global Sales for each Publisher. For pane Sum of Global Sales: The marks are labeled by sum of Global Sales. For pane % of Total Global Sales: The marks are labeled by % of Total Global Sales.

Finding 12

Figure 11: Video Games Global Sales per Decade

The data show that the highest global sales in a decade were recorded between the years 1991 and 2000.

Genres vs Global sales per decade

Sum of Global Sales for each Year (bin). The marks are labeled by sum of Global Sales.
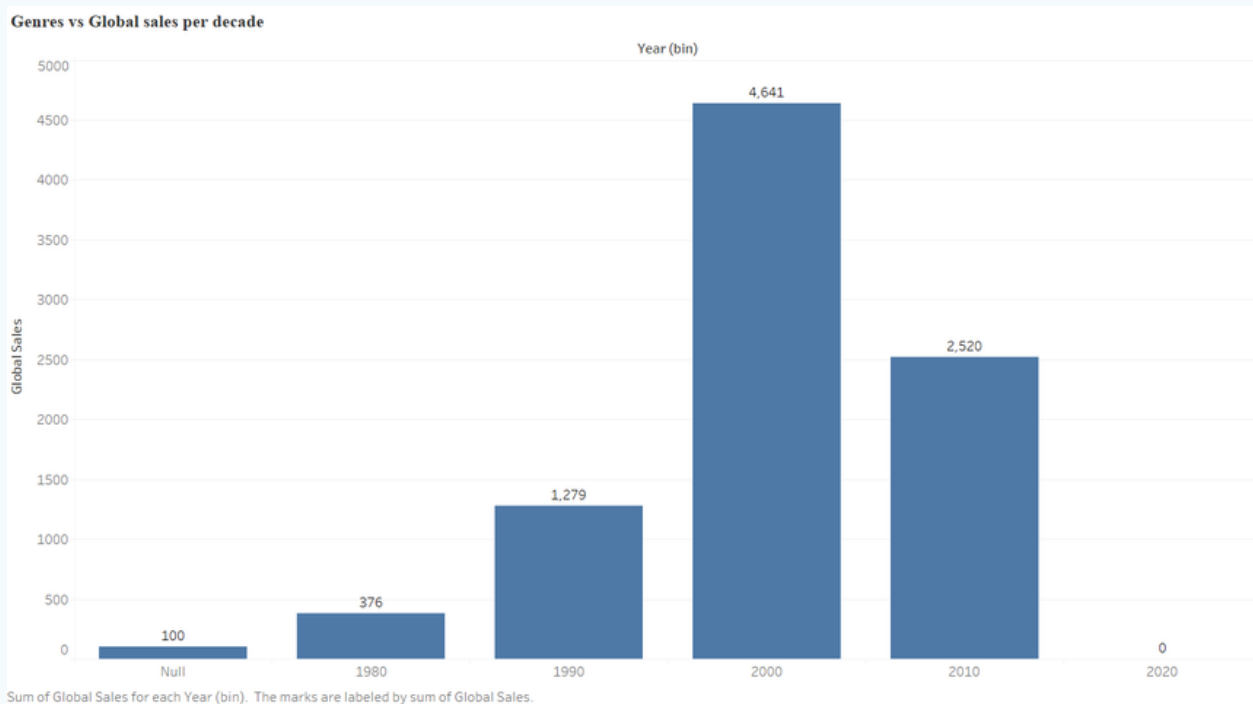
Analysis

My initial insight from the data is a possible decline in video game sales. This decline may result from a high initial cost outlay for the video games, lack of adequate marketing, inadequate support centers, etc.
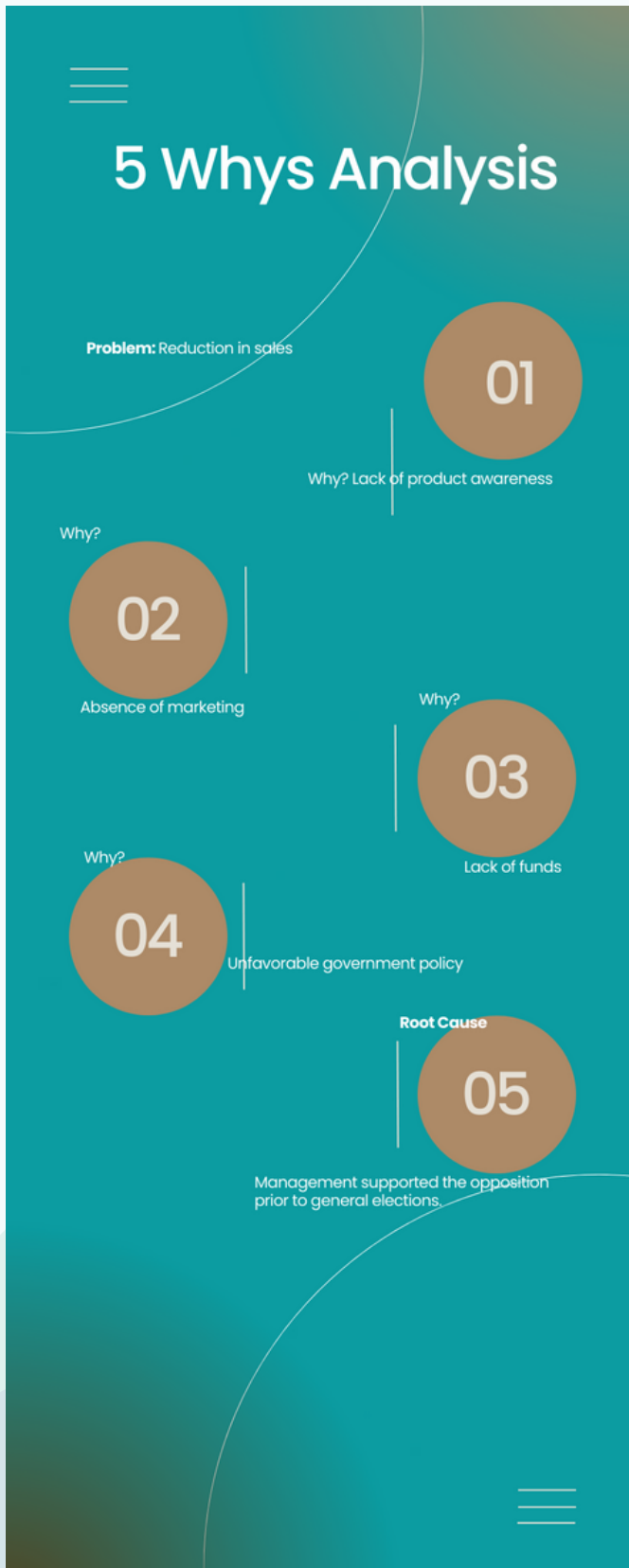
My inferences include reduction in revenue, lack of feedback, poor after-sales support, etc.

The essence of the 5 why analysis is to establish the root cause of the identified problems and fix them. The number of questions to be asked must not be limited to five (5) questions but rather get to the problem's root cause.

There is an opportunity to increase sales across the different regions.

Analysis

Five (5) whys analysis

5 Whys Analysis

Problem: Reduction in sales

01

Why? Lack of product awareness

Why?

02

Absence of marketing

Why?

03

Lack of funds

Why?

04

Unfavorable government policy

Root Cause

05

Management supported the opposition prior to general elections.

Conclusion

- Attractive marketing and endorsement from celebs may help drive up sales of video games, particularly the genres that have shown to be interesting to the market upon sorting out pending issues with the government.
- The publishing of games through Nintendo drives up prospective video game sales as 89.19% of the top 20 games have been through Nintendo. Nintendo seems to have what it takes to drive up sales. Hence, future publishing of video games is recommended to be made through them.
- It is important to resolve pending issues with the government of the day and avoid negative publicity.
- There has been a decline in the global sales of video games.
- There is an opportunity to increase sales across the different regions.

Appendix

Google Sheets Data Set for Udemy Project
https://docs.google.com/spreadsheets/d/1VovNdoGTdd
V5l4_vmH7gAm8nZnJuOawPSNwGt2A-uD0/edit?
usp=sharing

Tableau Data Visualization For Udemy Project

**Google Sheets Data Set for Video Game Sales Capstone
Project**
https://docs.google.com/spreadsheets/d/1VSn0yJFxTlNe
xpcAWe8pNOgGhZZwNwOLAjAFClC5vYA/edit?
usp=sharing

Tableau Data Visualization For Video Game Sales Project