

# AMAZON PRODUCT REVIEW ANALYSIS

**Maitri Narang**

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DSFT 8

The logo for 'amazon.com reviews' is displayed on a black rounded rectangular background. The word 'amazon.com' is in white lowercase letters, with a yellow curved arrow (the Amazon smile logo) positioned below the 'a' and pointing towards the 'm'. The word 'reviews' is in white lowercase letters and is positioned below 'amazon.com'. A small registered trademark symbol (®) is located at the top right of the 'm' in 'amazon.com'.

amazon.com®  
reviews

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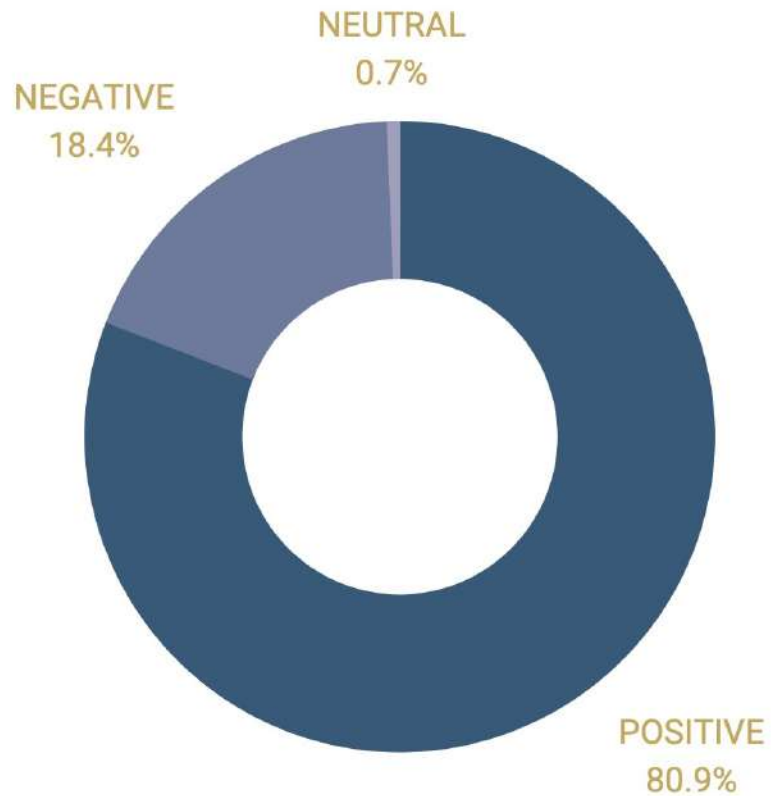
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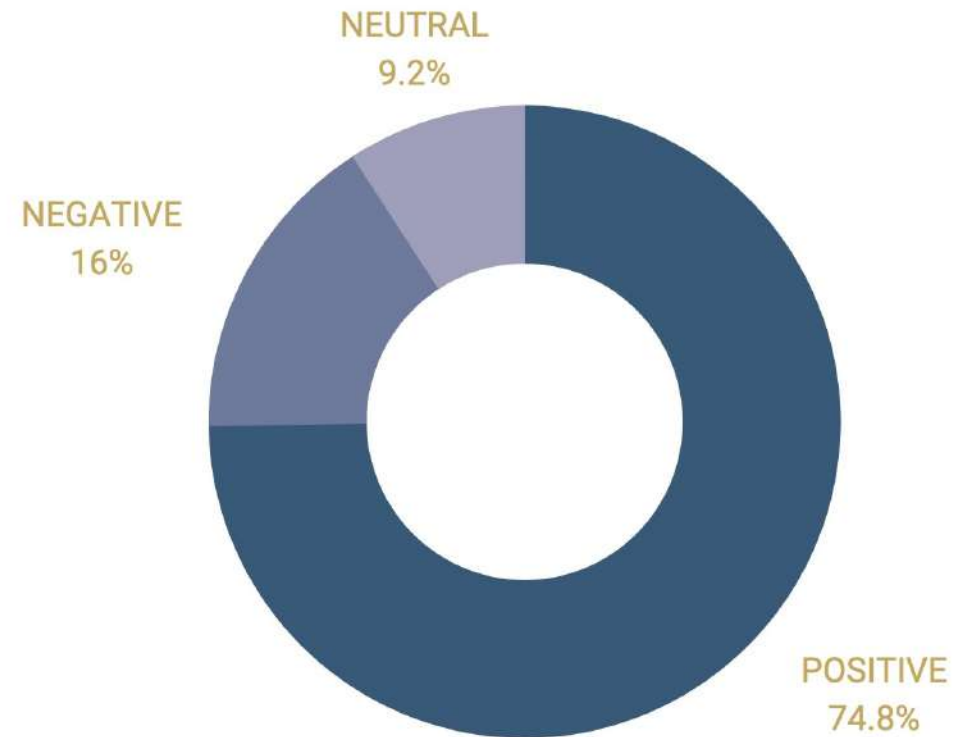
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**Future Product Demand Time series Analysis**

## Overall sentiment of customers



**VIDEO GAMES**



**SOFTWARE**

## Problem 1

- Cause of positive reviews?
- Which products are causing these ?
- Why are they causing these?
- What to promote more as per customer likings ?

### VIDEO GAMES

PRODUCT TITLE	REASON OF LIKING
Final Fantasy VII	good_final_game_battle_fantasy_character
Halo - Xbox	good_xbox_game
Super Smash Bros Melee	good_game_smash_mode
Final Fantasy X	great_story_good_graphics
Kingdom Hearts	good_disney_character_game

### SOFTWARE

PRODUCT TITLE	REASON OF LIKING
Microsoft Office Home and Student 2007 [Old Version]	good_student_microsoft_office_version
Microsoft Windows 8 Pro - Upgrade [Old Version]	fast_microsoft_windows_like_screen
Quicken Deluxe 2013	quicken_work_product_version
Amazon Music [PC] [Download]	love_amazon_prime_music_app_download
Quicken Deluxe 2014 [Old Version]	xquicken_work_upgraded_version

## Problem 1

- Cause of negative reviews?
- Which products are causing these ?
- Why are they causing these?
- What to change to solve the problem?

### VIDEO GAMES

PRODUCT TITLE	REASON OF DISLIKING
Halo - Xbox	spend_hour_install_drm_bad_time
Grand Theft Auto III	bad_weapon_control
Grand Theft Auto Vice City	system_issue_long_level_server_ho u
Resident Evil 4 - Gamecube	bad_ending_system_problem_time
Spore - PC/Mac	Server_issue_time_connection

### SOFTWARE

PRODUCT TITLE	REASON OF DISLIKING
Quicken Essentials for Mac	ong_download_transaction_mac
Quicken Deluxe 2013	long_download_time
Amazon Music [PC] [Download]	purchase_song_download_cloud
Quicken Deluxe 2014 [Old Version]	2014_version_work_issue
Avast Free Antivirus 2015 [Download]	nstall_antivirus_problem

# Business model to predict CUSTOMER CHURN

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Built a classification model to predict the customer churn, know about customers who are loyal, satisfied, and will recommend products to others

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1. Used SMOTE (Synthetic Minority Oversampling Technique) to balance the data labels

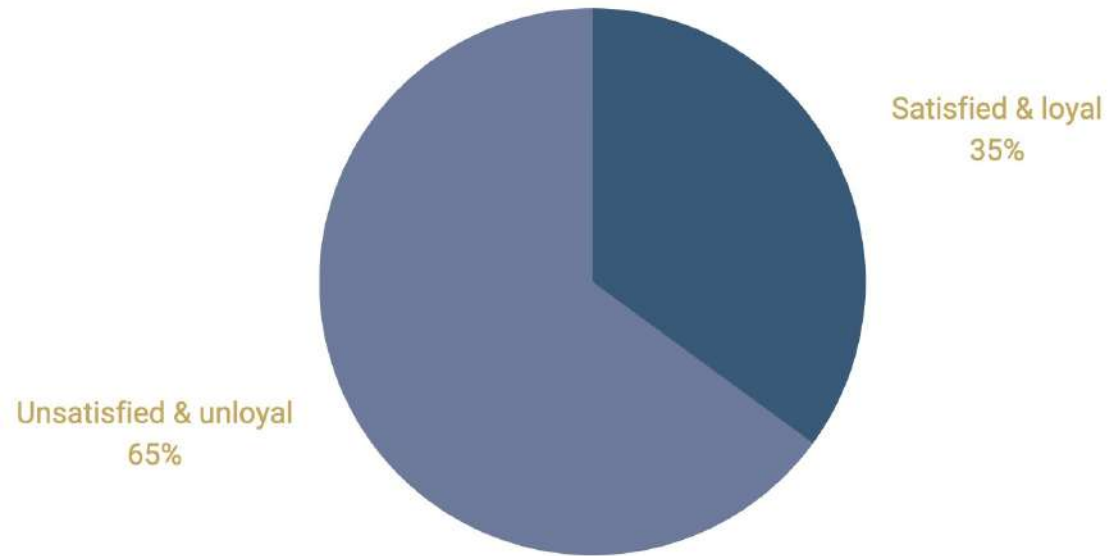
2. Trained the model to understand customer experience. (Model accuracy 92%)

Customer churn is based on the customer experience & satisfaction.

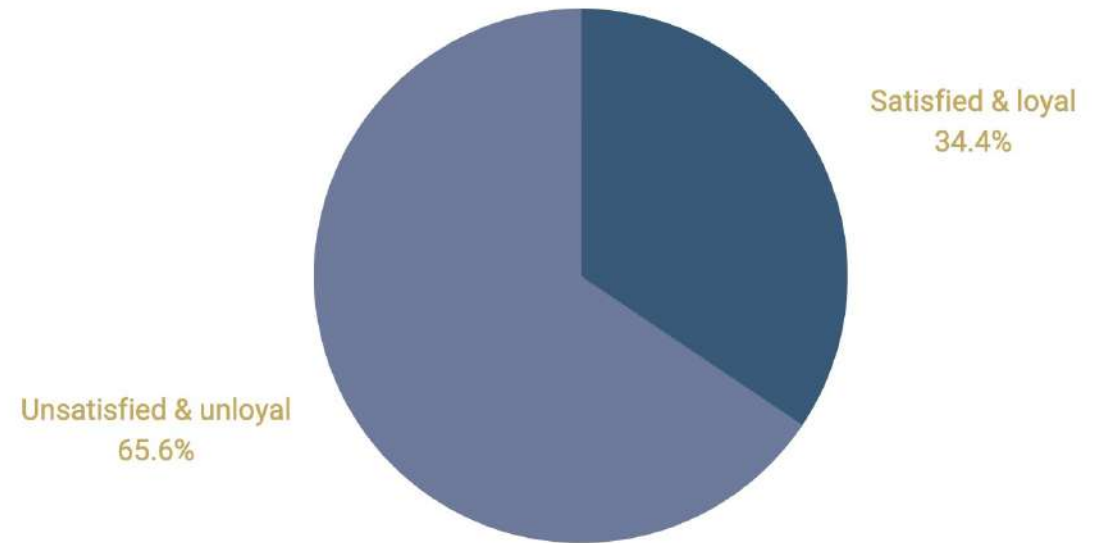


	asin	reviewerID	main_cat	helpful_ratio	review	overall	Sentiment_Type	Customer_churn
0	0700099867	A2HD75EMZR8QLN	Video Games	0.666667	Installing the game was a struggle (because of...	1	NEGATIVE	YES
1	0700099867	A3UR8NLLY1ZHCX	Video Games	0.000000	If you like rally cars get this game you will ...	4	POSITIVE	NO
2	0700099867	A1INA0F5CWW3J4	Video Games	0.000000	1st shipment received a book instead of the ga...	1	NEGATIVE	YES
3	0700099867	A1DLMTOTHQ4AST	Video Games	0.700000	I got this version instead of the PS3 version,...	3	POSITIVE	NO
4	0700099867	A361M14PU2GUEG	Video Games	1.000000	I had Dirt 2 on Xbox 360 and it was an okay ga...	4	POSITIVE	NO
...	...	...	...	...	...	...	...	...
995	B00005YVTZ	A1ZV5N0TCLFF0U	Video Games	1.000000	I rented this game an couple of weeks ago, and...	1	NEGATIVE	YES
996	B00005YVTZ	ASQUU3Q95SKS6	Video Games	0.666667	Unfortunately, I was one of those idiots who b...	2	NEGATIVE	YES
997	B00005YVTZ	ASQUU3Q95SKS6	Video Games	0.666667	Unfortunately, I was one of those idiots who b...	2	NEGATIVE	YES
998	B00005YVTZ	A2KVUYPLEW4LXT	Video Games	0.666667	What makes for a good shooter? Great graphics,...	3	POSITIVE	NO
999	B00005YVTZ	A2KVUYPLEW4LXT	Video Games	0.666667	What makes for a good shooter? Great graphics,...	3	POSITIVE	NO

## SATISFACTION RATE of customers



**SOFTWARE**



**VIDEO GAMES**



# Target Market

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Who are the customers you want to cater to?

## ☐ **Problem 3 : Customer Segmentation**

Customers segmented based on their overall values

# RFM SCORE

An RFM analysis evaluates clients and customers by scoring them in categories: how recently they've made a purchase, how often they buy, and the size of their purchases.



## Recency

Recency tells about the recent purchase made by the consumer.

## Frequency

Frequency tells the overall count of purchases made by a consumer.

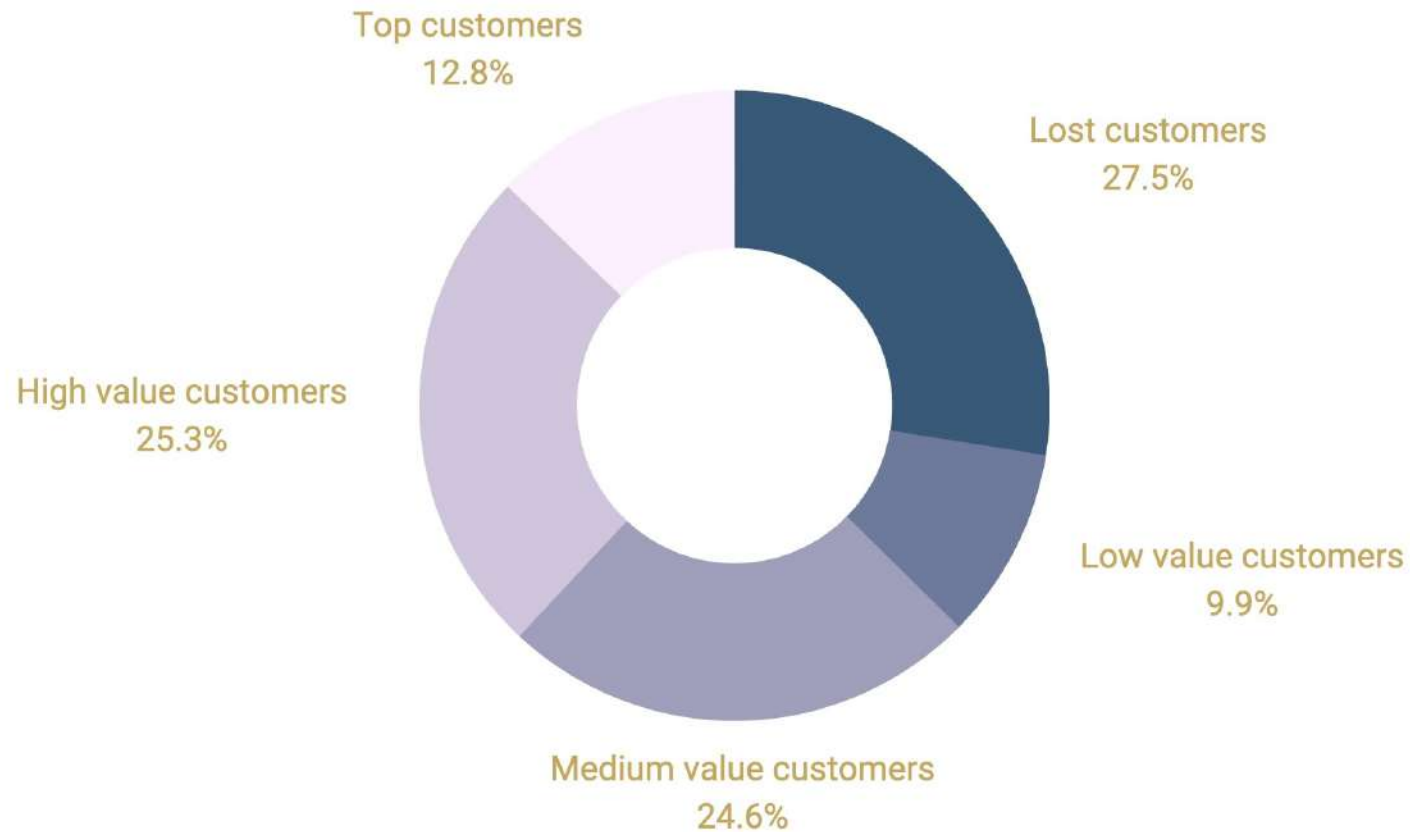
## Monetary

Monetary tells about the overall expense made by the consumer.

	CustomerName	RFM_Score	Customer_segment
0		4.15	Top Customers
1	□□□ "Top 100 Amazon Reviewer"	0.83	Lost Customers
2	! MR. KNOW IT ALL ;-b "DR SHOCK"	1.21	Lost Customers
3	"White_Crow"	3.87	High value Customer
4	"aaagew"	2.89	Medium Value Customer
5	"acwill007"	3.41	High value Customer
6	"adancingmonkeynamedbobo"	3.13	High value Customer
7	"adidas21012"	3.67	High value Customer
8	"american_psyco12"	3.75	High value Customer
9	"andrew007_jjj"	4.22	Top Customers
10	"arlovegas"	3.61	High value Customer
11	"arxane"	4.08	Top Customers
12	"atlantis_az"	3.10	High value Customer
13	"axemann92"	3.41	High value Customer
14	"azfarshahid2000"	3.12	High value Customer

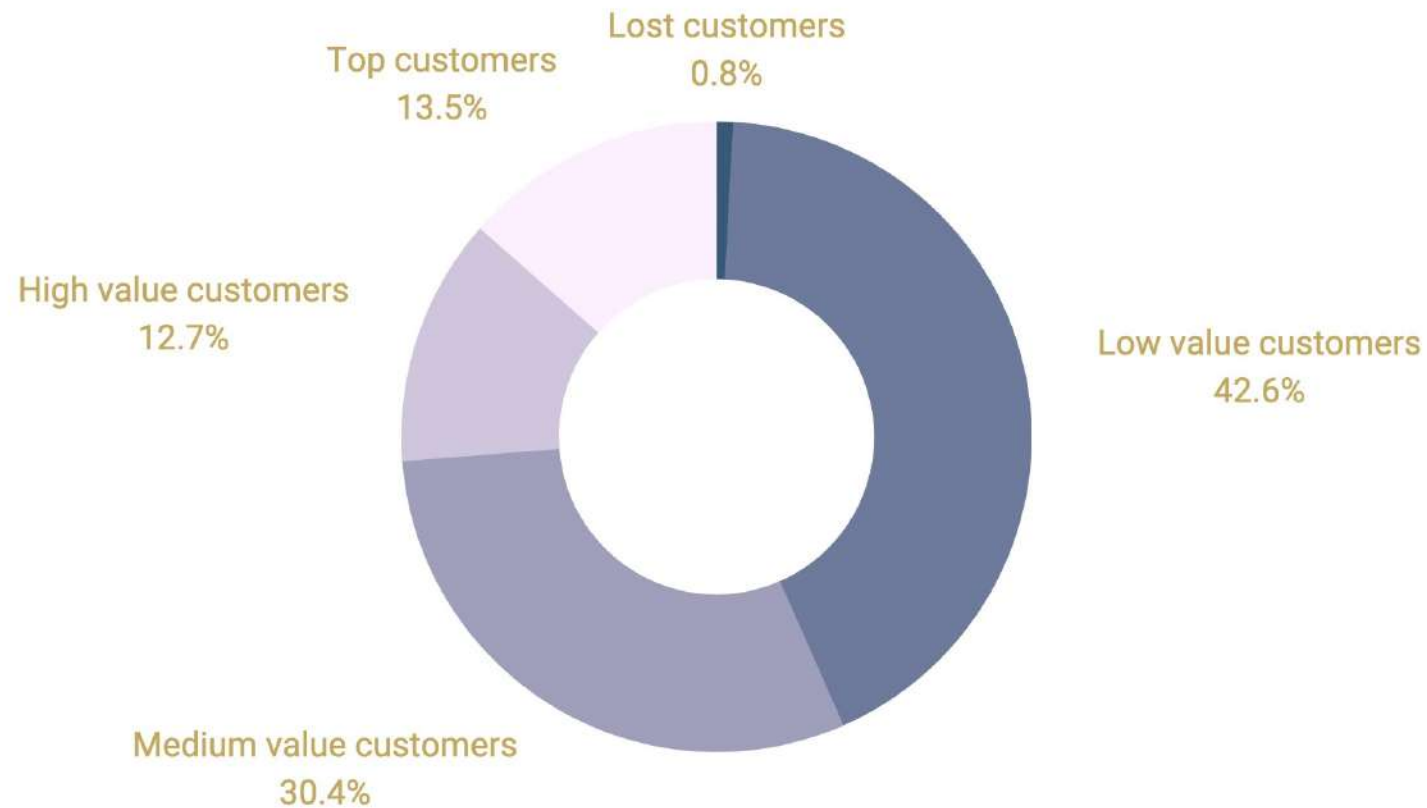
**The RFM model assigns a score of 1-5 (from worst to best) for customers in each of the three categories.**

## CUSTOMER SEGMENTATION ON BASIS OF RFM SCORE



**VIDEO GAMES**

## CUSTOMER SEGMENTATION ON BASIS OF RFM SCORE



**SOFTWARE**

# Product Demand and inventory optimisation using Time series analysis

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Demand and sales forecasting are of paramount importance in retail. Without this tool, companies encounter disruption of the inventory balance, through ordering too much or not enough products for a certain period of time.



In the case of surplus, a company is forced to offer discounts to sell products. Otherwise, it may face inventory issues. A shortage, in turn, results in lost profits.



However, these problems can be solved by applying demand and sales forecasting to increase the return on inventory and determine the intention of future consumers to buy a specific product at a specific price.



# Advantages of PRODUCT DEMAND FORECASTING

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## **1: Increase in sales**

All needed products will be available in the store, so customers can purchase them without waiting for long delivery times.

## **2. Customer satisfaction maintenance**

Warehouses will plan purchases in advance, so customers won't face the problem of their favorite product's absence.

## **3. Higher inventory turnover**

Thanks to proper planning of goods in warehouses, poorly selling goods will not be stale.

## **4.Reduction in the number of spoilage products**

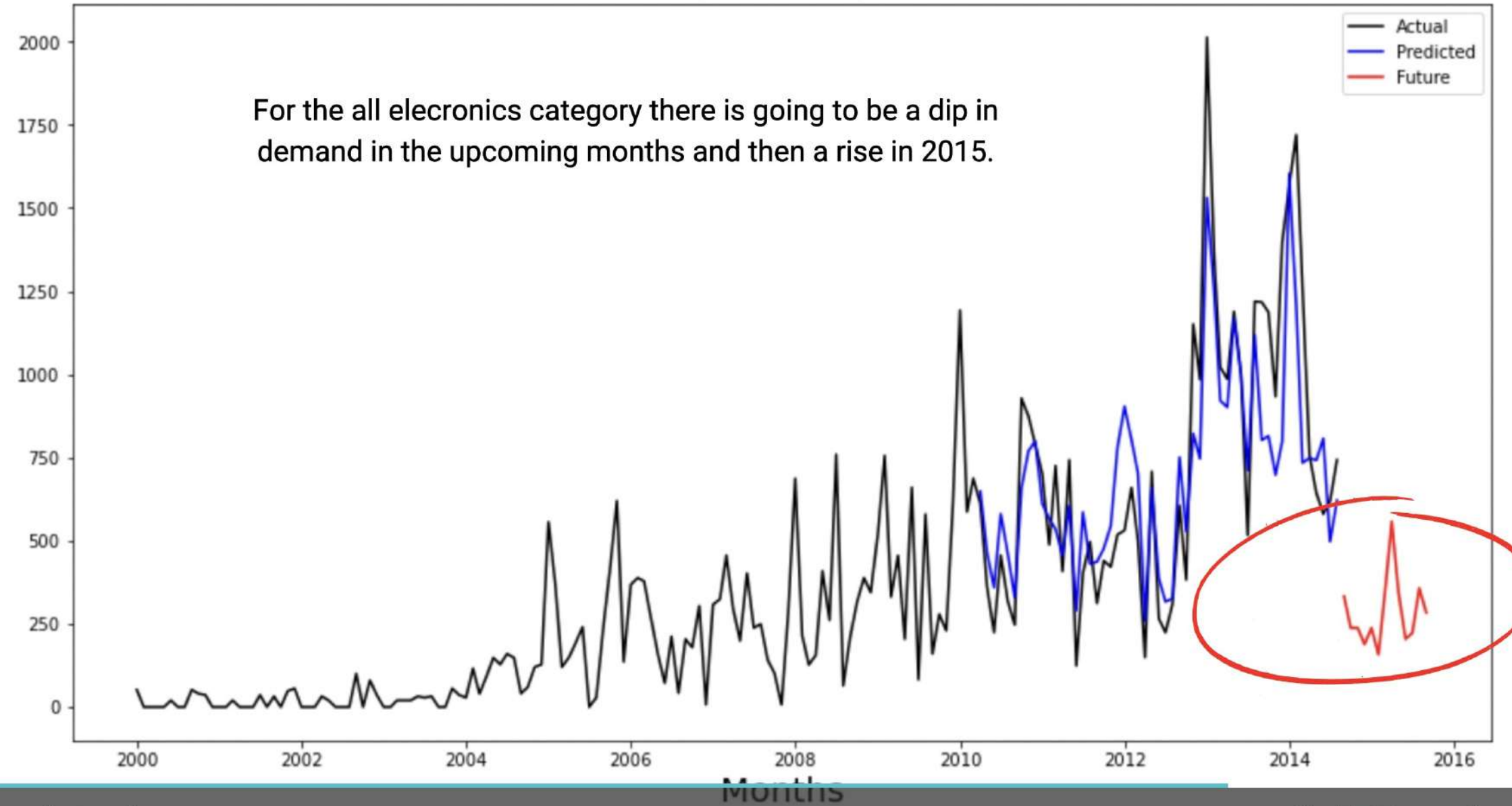
Demand forecasting will help to competently plan the delivery of products, considering expiration dates.

# Product Demand Forecasting for ALL ELECTRONICS category which has 1647 count all over period of time.

Video Games	225003
All Electronics	1647
Computers	1578
Software	509
Books	118
Sports & Outdoors	106
Toys & Games	74
Home Audio & Theater	46
Home Audio & Theater	26
Toys & Games	24
Sports & Outdoors	18
Entertainment	16
Cell Phones & Accessories	15
Musical Instruments	13



Actual / Predicted / Future

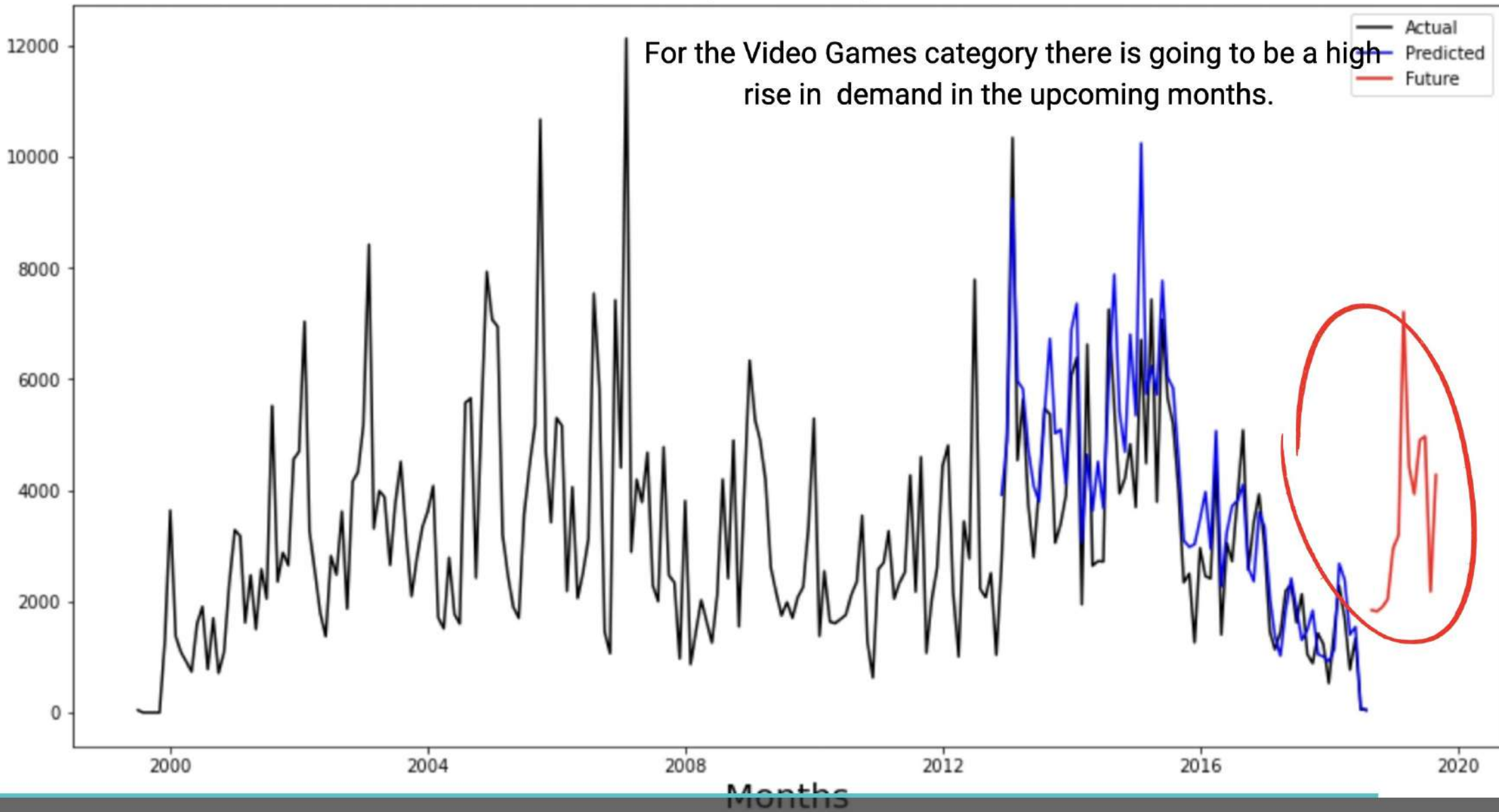


# Product Demand Forecasting for VIDEO GAMES category which has 1647 count all over period of time.

Software  
468551  
Video Games  
12617  
Cell Phones & Accessories  
4385  
All Electronics  
4062  
Toys & Games  
2601  
Movies & TV  
1458  
Cell Phones & Accessories  
1038  
Books  
872  
Office Products  
776  
Musical Instruments  
733



# Actual / Predicted / Future





# FUTURE ROADMAP

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01

**Promote GRAPHICS in products and MICROSOFT VERSION in software products.**

02

**Solve SERVER ISSUES in products and DOWNLOAD TIME in software products.**

03

**Target MEDIUM value customers to convert them into high value.**

04

**Retain HIGH & TOP value customers.**

05

**Stock up inventory for the upcoming future demands.**



# THANKYOU

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