

# E-Commerce Recommendation System

DHARMI, URVAJ, KEERTHANA, SHWETA, SUNVID



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BUSINESS PROBLEM &  
GOAL

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MODEL

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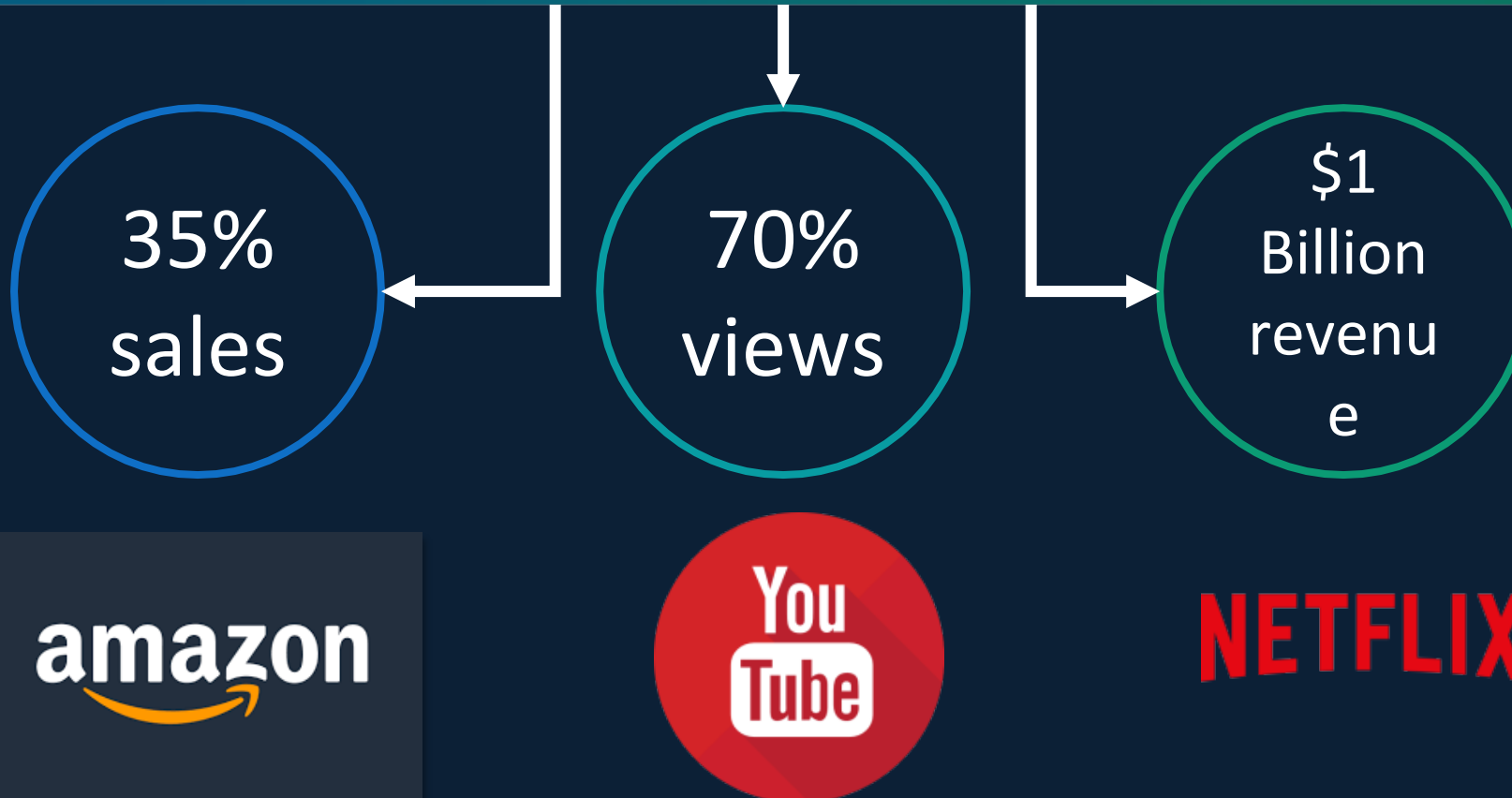
ROADMAP



# INTRODUCTION

THE ERA OF PERSONAL SHOPPING EXPERIENCES

## RECOMMENDATION ENGINES



# BUSINESS PROBLEM & GOAL

## BUSINESS PROBLEM

The e-commerce website lacks a personalized shopping experience for its customers which incurs opportunity cost with respect to higher sales within the relevant market.

## GOAL

# 21%

Increase in Overall Sales  
this year

## SOLUTION

Build a recommendation system based on past customer shopping behavior to provide a personalized shopping experience to them.



# BUSINESS PROBLEM & GOAL

## BUSINESS PROBLEM

The e-commerce website lacks a personalized shopping experience for its customers which incurs opportunity cost with respect to higher sales within the relevant market.

## GOAL

# \$8.6M

Revenue by the end of  
the year  
from \$7.1M

## SOLUTION

Build a recommendation system based on past customer shopping behavior to provide a personalized shopping experience to them.



# MEET OUR TEAM

## DUKSS ANALYTICS



**DHARMI**

Customer Satisfaction  
Manager



**URVAJ**

Customer Research  
Analyst



**KEERTHANA**

Financial Analyst



**SHWETA**

Senior Data  
Scientist



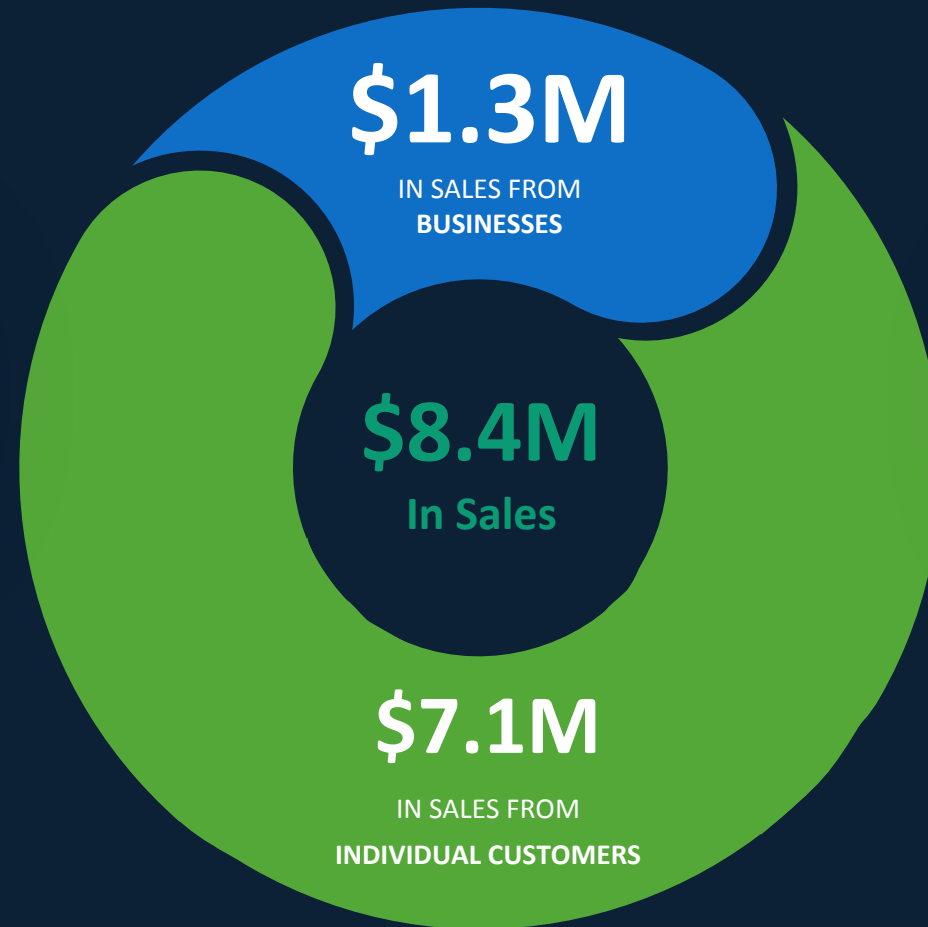
**SUNVID**

Marketing Analytics  
Manager



# DATA & INSIGHTS

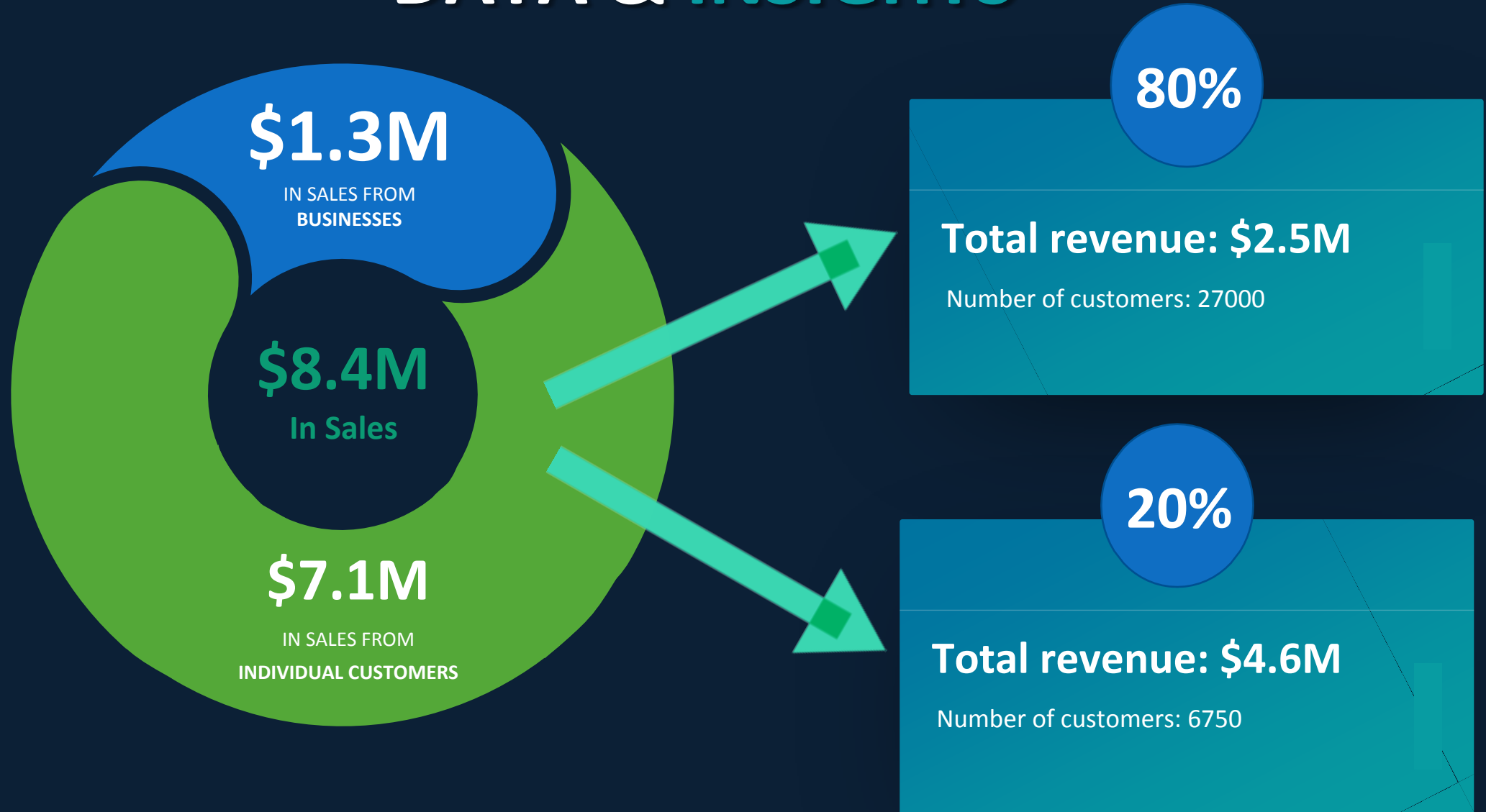
- 33,713 customer records.
- 30 book categories



- Monetary values > 20K are institutes
- Focusing analysis on individual customers.



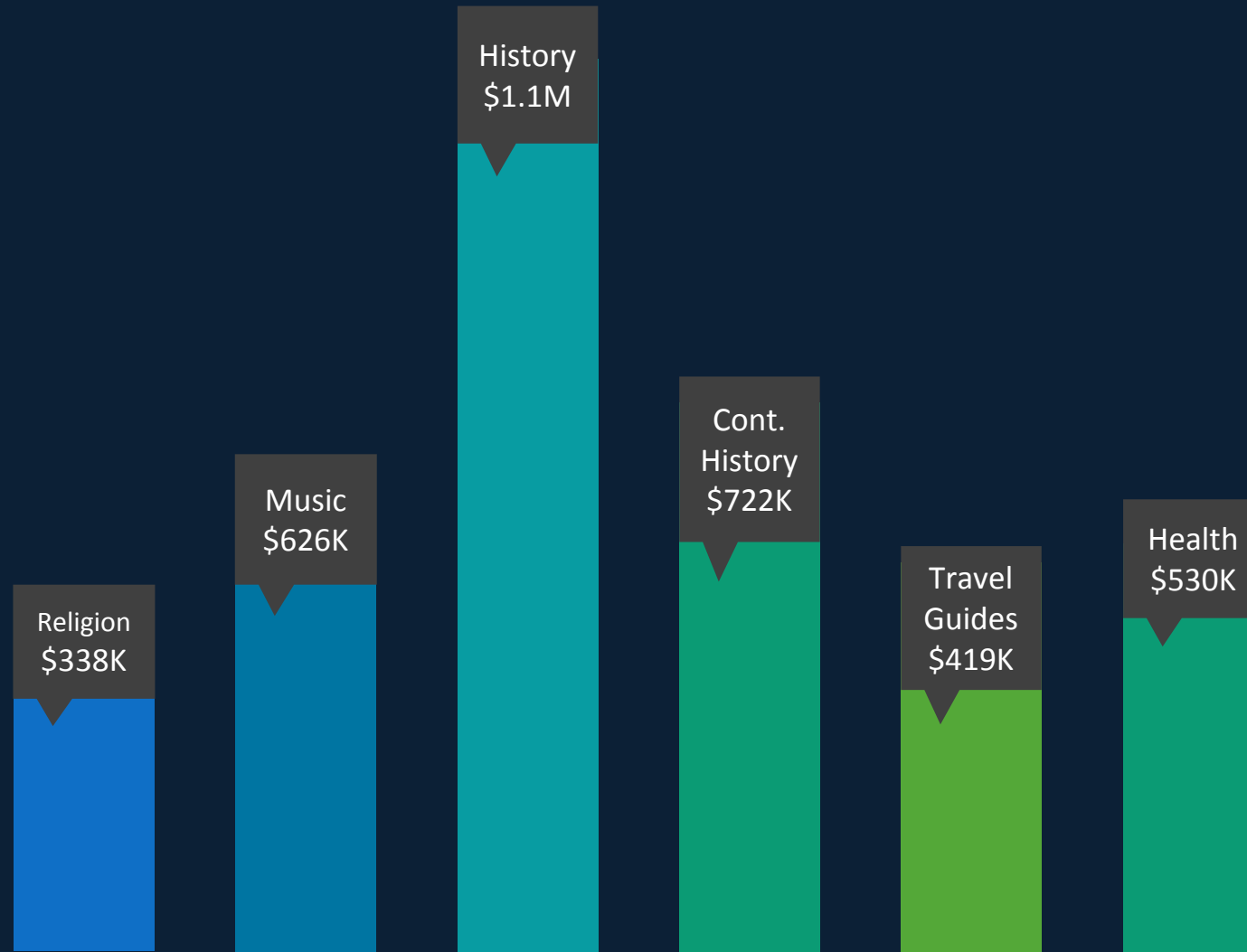
# DATA & INSIGHTS





# DATA & INSIGHTS

## TOP BOOK CATEGORIES FOR INDIVIDUAL CUSTOMERS



# METHODOLOGY – RFM ANALYSIS

## KEY METRICS



### RECENCY

How recently a customer has transacted with a brand



### FREQUENCY

How frequently they've engaged with a brand



### MONETARY

How much money they've spent on a brand's products and services

# METHODOLOGY – RFM ANALYSIS

## KEY METRICS & ALGORITHM



### RECENCY

How recently a customer has transacted with a brand



### FREQUENCY

How frequently they've engaged with a brand



### MONETARY

How much money they've spent on a brand's products and services

Assign every customer a rank on a scale of 4 for each metric using quartiles

4 – Best

3 – Good

2 – Not Good

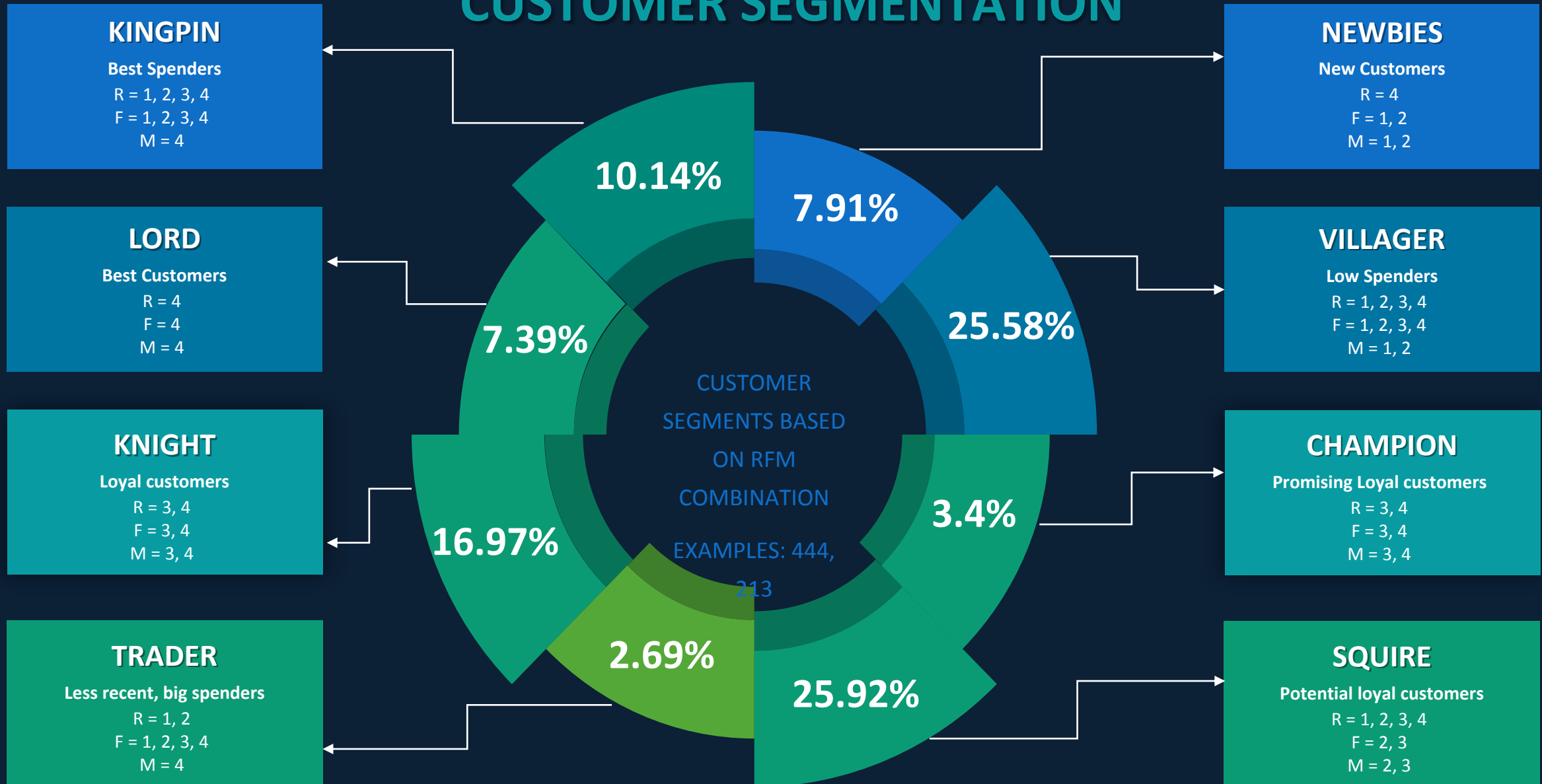
1 - Worst





# METHODOLOGY – RFM ANALYSIS

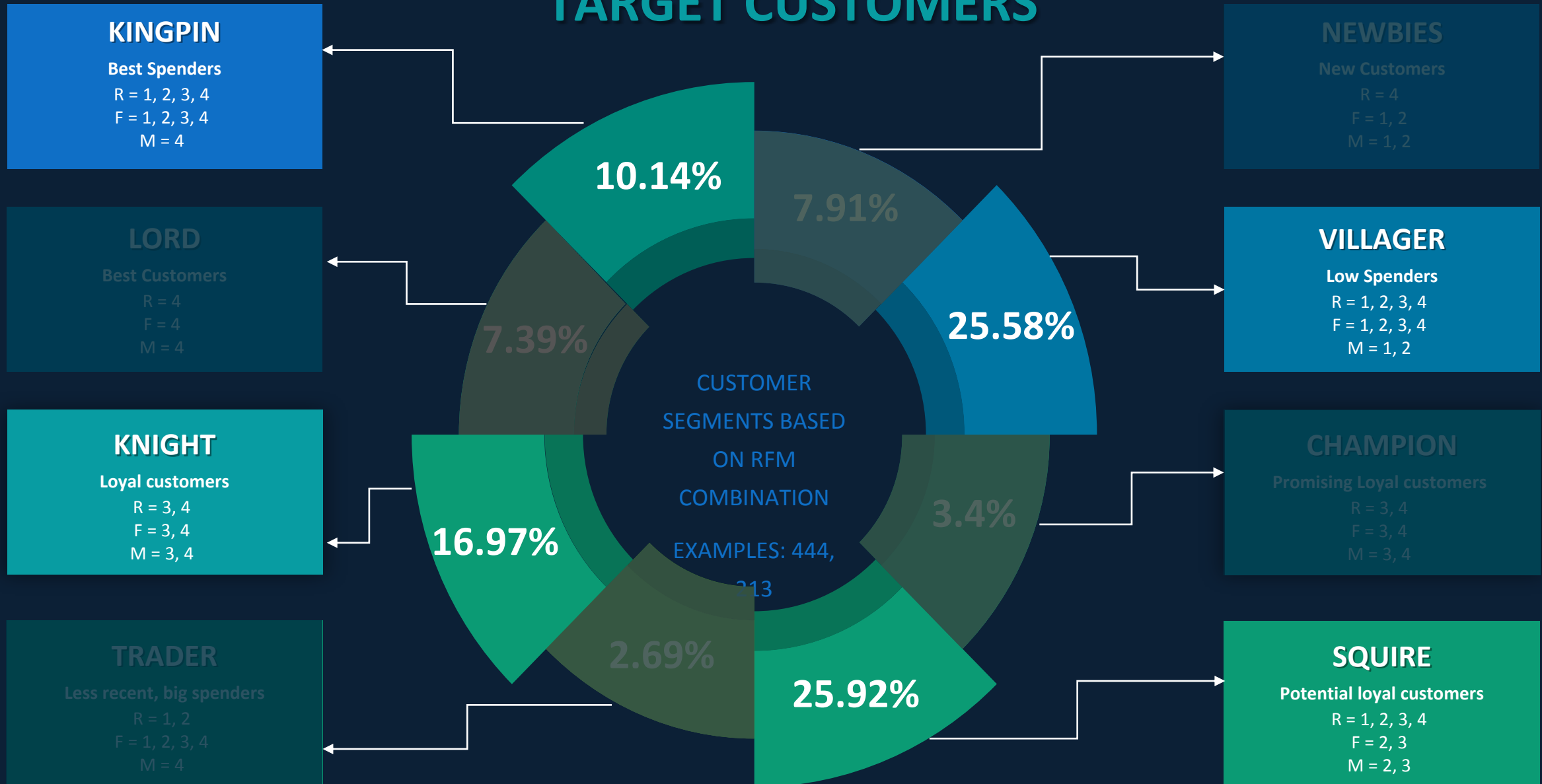
## CUSTOMER SEGMENTATION





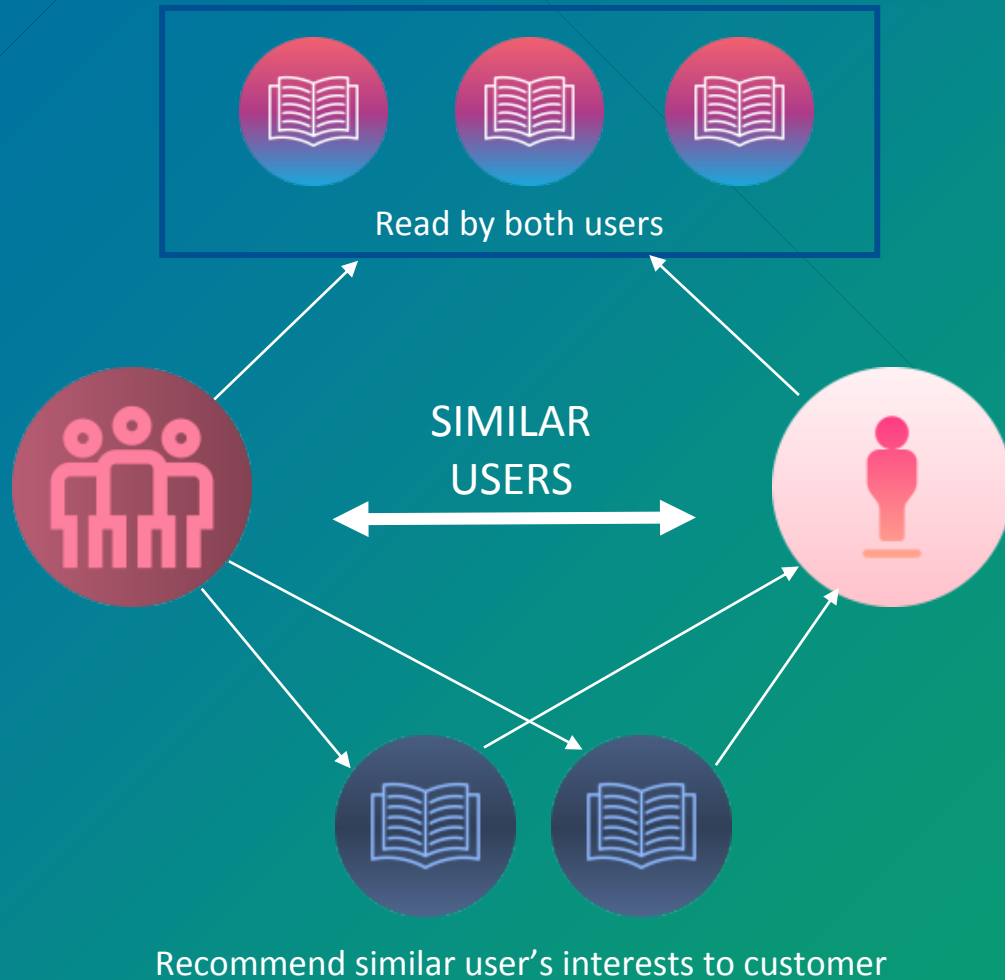
# METHODOLOGY – RFM ANALYSIS

## TARGET CUSTOMERS

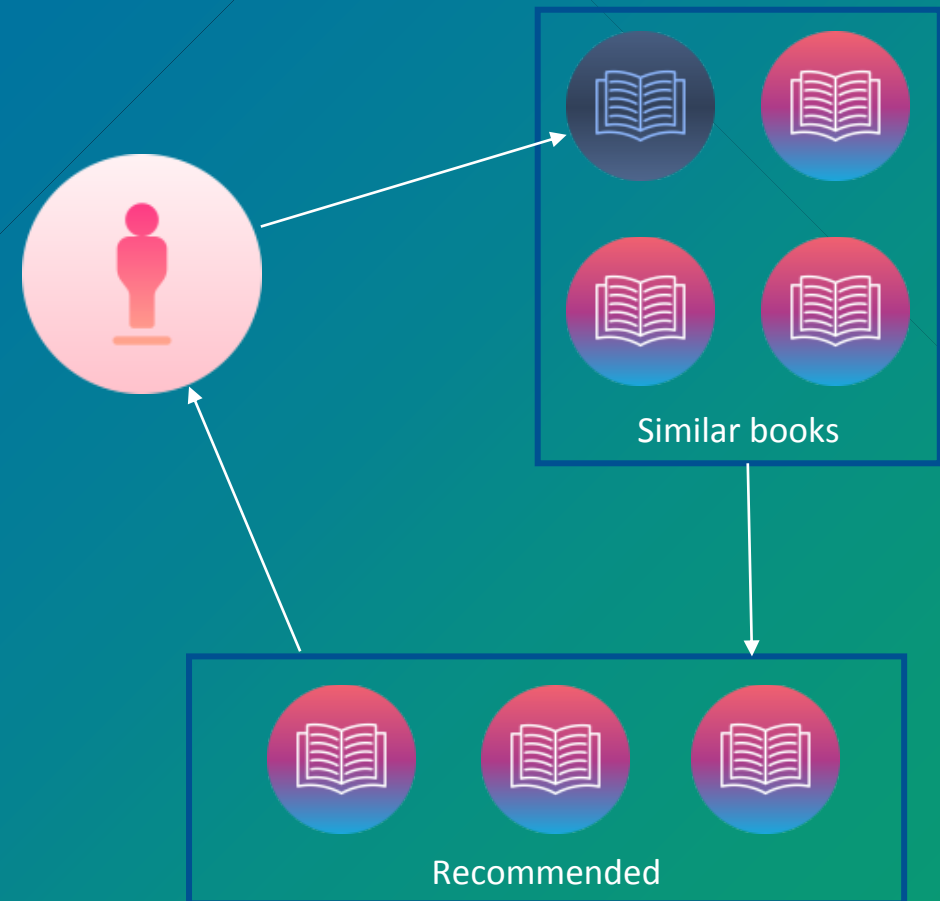


# MODELS USED WITH RFM ANALYSIS

## COLLABORATIVE FILTERING




## CONTENT BASED FILTERING



# MARKETING STRATEGIES

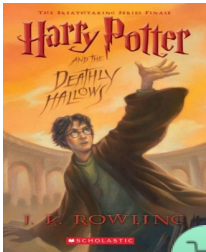





THE BOOK PALACE

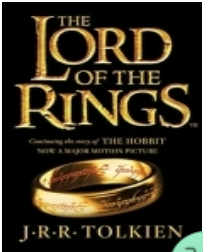
HOME   CATEGORIES   CART   HI BRYAN

ITEMS FOR YOU




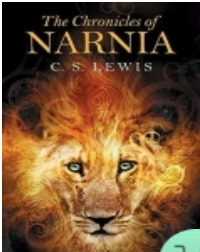
\$9.99







\$9.99






\$5.99

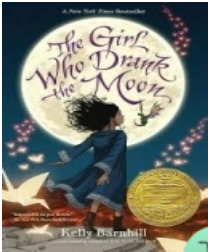





\$7.99

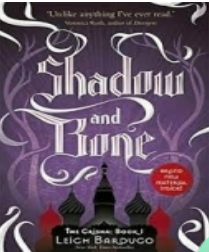


CUSTOMERS LIKE YOU BOUGHT




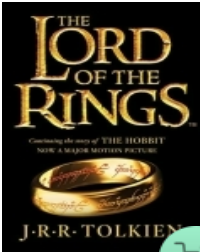
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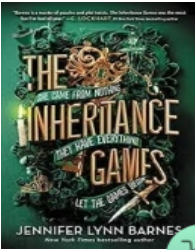
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\$9.99






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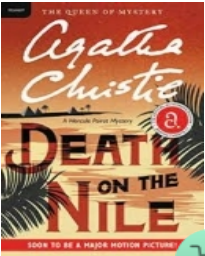
# MARKETING STRATEGIES



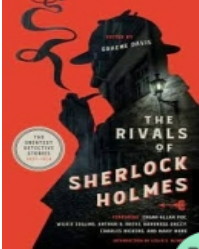
THE BOOK PALACE

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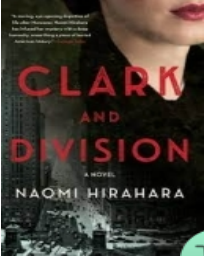
PRODUCTS RELATED TO THIS ITEM



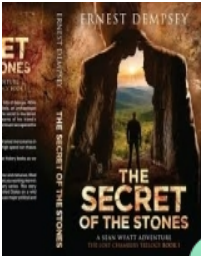
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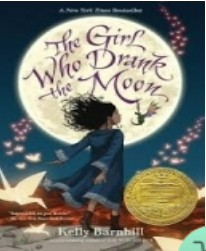


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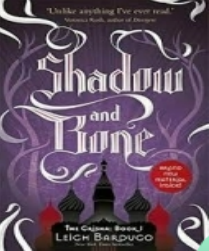


\$7.99

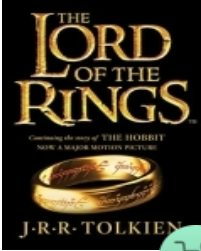
FREQUENTLY BOUGHT TOGETHER



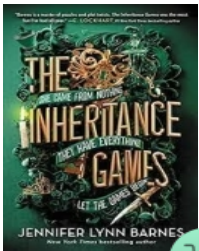
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\$5.99



\$9.99




\$8.99



# MARKETING STRATEGIES

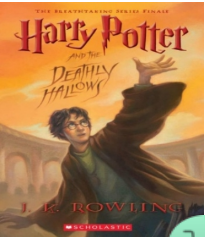





THE BOOK PALACE

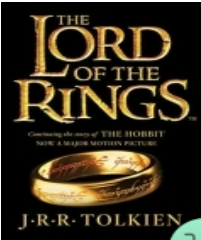
HOME   CATEGORIES   CART   HI BRYAN

MOST POPULAR ITEMS




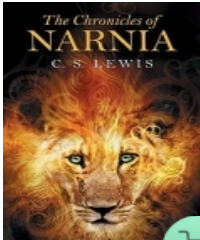
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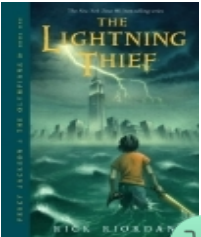
\$9.99







\$5.99





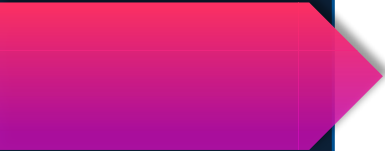
\$7.99





THE BOOK PALACE

HOME   CATEGORIES   CART



# MARKETING STRATEGIES

## TARGETTED MESSAGING



### KNIGHT – LOYAL CUSTOMERS

- Loyalty programs – Gold, Silver Platinum customers
- Early access reward based on level of loyalty program the customer is in



### KINGPIN – BEST SPENDERS

- Convey scarcity or urgency of product stock
- Rewards program
- Recommend rare/luxury book items



### SQUIRE – POTENTIAL LOYAL CUSTOMERS

- Loyalty programs, Rewards programs
- Referral programs
- Ask for reviews and surveys



### VILLAGER – LOW SPENDERS

- Discounts, Promotions
- Rewards programs, loyalty programs
- Referral programs



### ALL CUSTOMERS

- Email Marketing – personalized offers/programs based on customer segment





# ECONOMIC VALUE

SEGMENT	Current Revenue	New Revenue	Increase in Revenue		Total Revenue	
			INCREASED BY	% INCREASE	% INCREASE	TOTAL
WITHOUT RECOMMENDATION SYSTEM						
Top 20% customers	\$4.6M		\$0.71M	10%	10%	\$7.81M
Remaining 80% customers	\$2.5M					
WITH RECOMMENDATION SYSTEM – 1 <sup>st</sup> YEAR						
Top 20% customers	\$4.6M	\$5.98M	\$1.38M	30%	21.2%	\$8.61M
Remaining 80% customers	\$2.5M	\$2.63M	\$0.13M	5%		
WITH RECOMMENDATION SYSTEM – 2 <sup>nd</sup> YEAR						
Top 20% customers	\$5.98M	\$7.18M	\$1.2M	20%	17%	\$10.08M
Remaining 80% customers	\$2.63M	\$2.9M	\$0.26M	10%		

# ROADMAP



Suggest personalized recommendations via email, text messages to customers



Use geographical data to further make recommendations based on location



Implement the recommendation model with User Acceptance tests



Implement promotional offers to attract new customers



To increase revenue, provide targeted ad space for some products



**THANK  
YOU!**