Increasing Gains Through a Data-Driven Approach of Personalizing Customer Experiences

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Tactical Titans Consulting Company

Meet the Team

Who Are We and What Are Our Qualifications?

Adela Cho
Client Liaison

Adela has been with Tactical Titans for 2 years and has a background in Marketing and Design in the tech and e-commerce industry.

Aashai Avadhani
Data Scientist

Aashai has been with the Tactical Titans for 5 years, and specializes in Data Science in the e-commerce industry. Education in Statistics and Machine Learning

Mike Meissner
Customer Success Manager

Mike has been with Tactical Titans for 3 years and has used his background in Psychology and HR to increase customer satisfaction and customer retention.

Roselyn Rozario
Finance Manager

Roselyn has been with the Tactical Titans for 5 years, and has a background in Economics, which has helped her successfully managing several projects where she has maximized returns and minimized costs.

Jaelynn Kim
Project Manager

Jaelynn has been with Tactical Titans for 2+ years where she has successfully managed over 7+ project life cycles. Coming from a background in Economic Policy Analysis.

Tactical Titans Consulting Company's Background

- 5+ years of experience in the industry, including in areas such as the e-commerce, retail and corporate sectors

- Consulted for companies, including but not limited to
  - PowerPulse Fitness Club
  - Hummingway Publications
  - McDonald's
  - Verizon

- Partnered with Fortune 500 companies to increase their interbrand rating

Client Testimonials

"Tactical Titans Consulting Company has consistently delivered solid strategies pertaining to innovation and market dynamics. One of the most passionate and knowledgeable teams we've worked with."
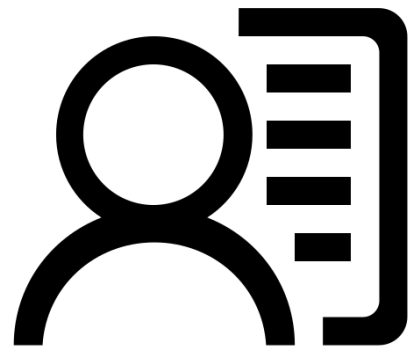
- CEO of Between the Lines

"Since partnering with the Tactical Titans, our company has been able to utilize their tailored strategies to see an increase in customer retention rates and sales.We couldn't be happier with the results!"
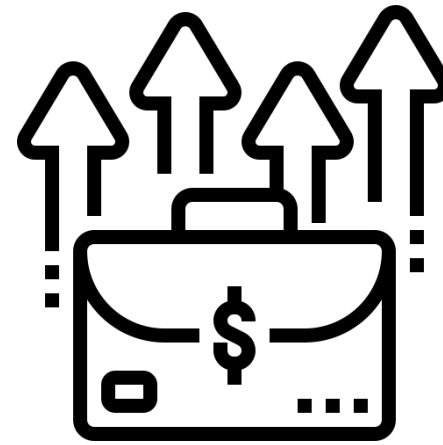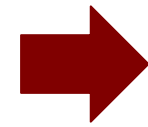
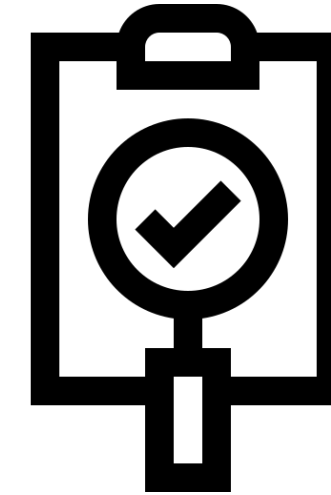- Director of Customer Relations of PowerPulse Fitness Club
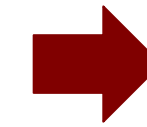
Project Goals & Purpose

Why Are We Here?

Leverage Customer-Specific Data
Enhance **User Experience** and Increase Sales

Develop Customer-Specific Recommendation Engine
Tailor to Each **Website** Visitor

Implement Recommendation Engine
Use Data-Driven Approach to Bring Gains to Booksmart

- ❏ Investigate sample data to **identify customer segments**
- ❏ **Develop a unsupervised clustering approach** that serves as the data-driven model for customer segmentation
- ❏ **Create incentives** specific to each segment
- ❏ **Quantify the benefits** through a business value estimate
- ❏ **Design an implementation process focusing on marketing and website enhancement techniques** that carries out recommendation engine

Impact from a Data-Driven Approach for Booksmart

- **Approach:** Personalizing Experiences by Customer Segments (**PECS**)

- PECS delivers the following results:

  o **+20% incremental sales** among the most engaged (a.k.a. "Active Readers") top 15% of customers

  o **+3-5% improvement sales** amongst the remaining 85% of customers (i.e., "Occasional Readers," "Sparse Readers" and "New Readers")

	Model Impact Overview		
	Model Impact on Sales	Percentage of Customers	Dollar Value
Most Engaged Customers	**+20%**	**15%**	**$28,246.40**
Other Segments	+3-5%	85%	$11,680.96
Total	+23-25%	100%	$39,927.36

- **Solution:** PECS shows **success across all customer segments**, but 15% of the most engaged customers, "Active Readers", should be focused on through deliberate **marketing strategies** given that the highest impact is on that segment, which will **improve the usability of the website**

Why PECS Is a Better Choice Over the Current Approach

- **Customers expect** Brands to be personalized within their customer experience

- **Current "One Size fits all"** approach is not working for all customers and is showing a **decrease in brand loyalty**

- PECS allows us to create **Brand Persona for all of our customers**

- **Customer Segmentation** enables personalized experiences for all customers at scale
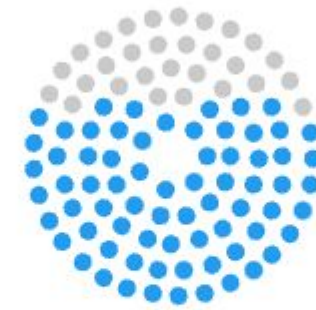
Loyalty is up for grabs…   …and consumers expect personalization from the brands and businesses they choose.

75%
of consumers tried a new shopping behavior during the pandemic[1]

71%
of consumers expect personalization[2]

76%
of consumers get frustrated when they don't find it[2]

"Our research shows that 71 percent of consumers expect companies to deliver personalized interactions. And 76 percent get frustrated when this doesn't happen"

- Mckinsey & Co

Achievements with PECS and the Benefits It Will Bring to Booksmart

- **Created customer segments** based on their customer behavior

- **Developed personalized experiences** through customer incentives tailored to each segment

- **Designed a model** that brings the following **benefits**:
  - Increases sales
  - Increases conversion rate (CVR) **by +10%**
  - Increases efficiency through improved sales conversion time
  - Leads to high returns for an inexpensive investment

- **Developed an implementation process** and **change management plan** that is based on a data-driven approach, PECS

From the Lens of a CMO and Webmaster

CMO	Webmaster
• PECS is **marketing focused** with how it tailors experiences according to customer preferences	• Implementing PECS involves an **improved website and user experience** • **Gain** on Key Web Metrics **(CTR, TIme to Conversion)**

ML Based Approach for Customer Segments Creation

Modeling Process Review

- **Machine Learning** automates the manual process of creating segments
  - K-Means model used which creates segments based on customer purchase behavior

- **Input into the Model**:
  - **Recency**: (time since last purchase)
  - **Frequency**: How often the customer visits the website
  - **Purchase Behavior:** Types of books the customer likes read

- **Output: Segments** that are attached to each **unique id**
  - **i.e.,** Active Readers Visit 11 times

Time since last purchase | Customer Visit Rate | Purchase Behavior

K-Means Methodology

Before K-Means → K-Means → After K-Means

Active Readers | Sparse Readers | Occasional Readers | New Readers
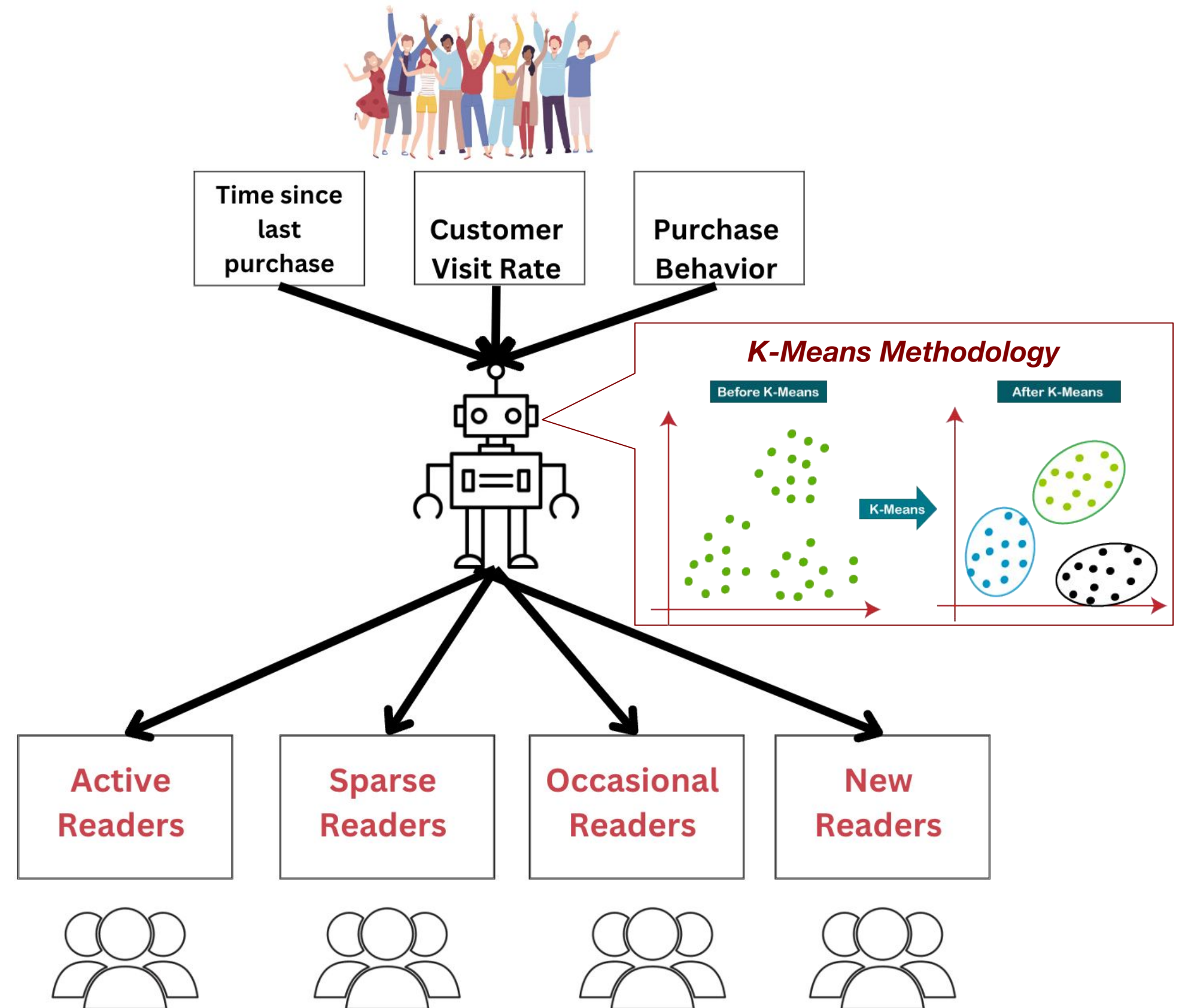
Segments Overview and Corresponding Incentives

- **Discounts** drive **high revenue customers** and **increase brand loyalty**

- **Referral programs increases Customer LTV and frequency** to the site exponential through a network effect

- **Exclusive Book Clubs** cause more users to gain a community like feel which spreads interaction through **word of mouth**

	Active Readers	Occasional Readers	Sparse Readers	New Readers
Personalized Experience	• Exclusive early access to pre-release books in their favorite genre (History). • Also, every third book receive a 10% discount.	• Personalized book recommendations • Surprise gift (Map) with their next order.	• Join our Book Club and get a free music e-book download every month.	• Referral program: Existing customer and recipient of referral receive 20% discount off next purchase when new customer uses referral
Reason and Confidence in Pairing Segments with Specific incentives	• Rewards our most loyal customers while still resulting in a financial gain for Booksmart.	• Show we understand their taste, promoting repeat engagement • Surprise gift makes for a more memorable shopping experience	• Sparse Readers enjoy music books, a free e-book download in this genre will show that we understand our readers preferences. • The book club will foster a community of regular interaction with the site.	• Power of word-of-mouth. • Win-win situation that encourages organic growth of the site.

Recommendations: Breakdown of Solution

01

Focus marketing efforts on the most **engaged** customers (active readers segment)

- Craft **targeted** messages highlighting the **exclusive** early access program while also reminding readers via text or email of the every third purchase 10% discount

- Touch base with popular history book authors on being involved in the early access program

02

Implement a more **personalized book recommendation system on the website** instead of current "most popular" approach for top 15% of customers

- Utilizing the segmentation model should make personalizing recommendations much more seamless by allowing for a more granular understanding of customer book preferences

- Allowing resources to be allocated more efficiently with only having to implement personalized recommendations on a small percent of customer base

PECS' Business Value

- KPIs increase with PECS and improve upon current approach

  - A **20%+ increase** in sales translates to a over **$28K increase in sales** amongst the sample group

  - Conversation Rate **increases by 10%**, which is a **gain of over $250K**

- Implementing PECS is inexpensive

- **PECS' Business Value** is **almost $300K**

- When PECS is applied to beyond just the sample group of customers, the benefits will only **multiply**

KPIs	Current Approach	With PECS	Gain
Percentage Increase in Sales	–	+20%	**+20%**
Dollar Value Increase in Sales	–	$28,246.40	**$28,246.40**
Conversion Rate	5%	15%	**+10% CVR = $257,210**
Sale Conversion Time	10 Minutes	5 Minutes	**+50% Time**

Implementation Costs	
Incentive Costs	$580
Implementation Costs (e.g., Website Updates)	$1,500
Labor Costs	$900

Total Monetary Gain	**$285,456.40**
Total Costs	**$2,980**
Profit	**$282,476.40**

Business Value of Investing in PECS

- Total investment costs only make up **around 12%** of the predicted total monetary value of returns

- The **returns** are **~8.5x greater than the costs**

- These costs and returns of the sample group will scale accordingly for the total customer population, but the numbers will stay approximately the same

- PECS being focused on **marketing strategies** and **website enhancements** makes it an impactful approach

- Minimum investment leads to high gains

	Expected
Analytic Costs (4 Weeks)	

Databrick Costs
    Ex. DBUs Per Node Per Hour = 1 DBU
    $400/Week
	$1,600

Azure VM Cost $200/Week	**$800**

Salary
    Client Liaison (1): $35/Hour
    Data Scientist (1): $50/Hour
    Customer Success Manager (1): $45/Hour
    Finance Manager (1): $45/Hour
    Project Manager (1): $45/Hour
    35 Hours/Week
	$30,800

Analytic Benefits	
Monetary Gain With PECS (including increase in sales and efficiency)	**~$285K**

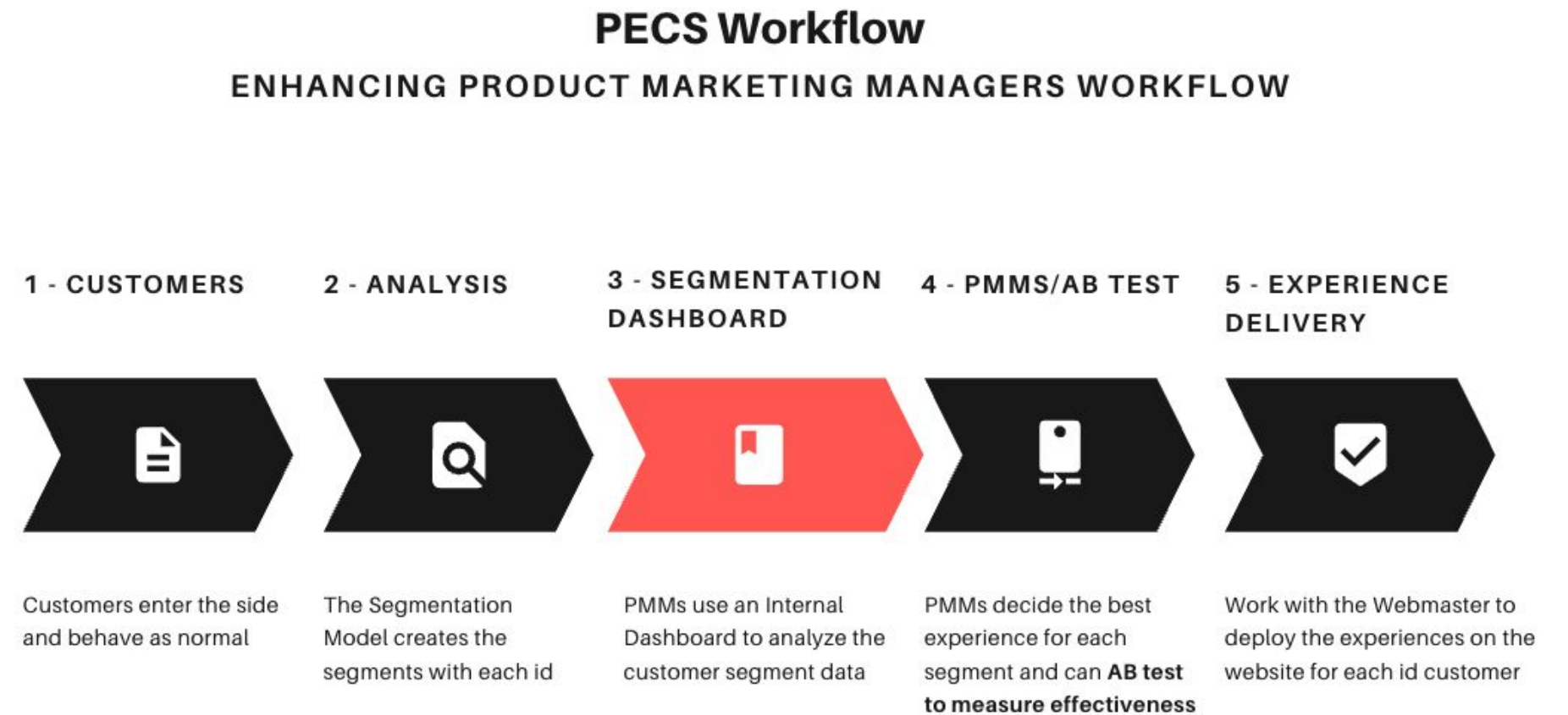|	
Total Investment Costs	**$33,780**
Total Monetary Value of Returns	**$285,456.40**
Net Present Value (NPV)	**~$252K**

Implementation Process Overview

06/20/2024 — Backend Integration of Model to Website	• Introducing segmentation model to test environment simulating the website without making model public • Behind the scenes test run with sample customer data to ensure accurate customer segmentation
07/01/2024 — Performance Review and Fine Tuning	• Carefully review segmentation results and verify accuracy of customer categorization • Fine tune segmentation model through detailed review and team feedback
07/08/2024 — Soft Launch of Segmentation Model	• Official launch of segmentation model to the website without the recommendation engine • Collecting segmentation result data from live customer interactions in website
07/08/2024 – 07/19/2024 — Live Performance Review and Adjustments	• Ensure accuracy of live customer segmentation results • Refine the segmentation model through final revision based on live performance
07/22/2024 — Integration and Launch of Incentives	• Introduction of incentive recommendation model alongside the refined version of segmentation model • Collaboration with web development team to ensure seamless integration into existing web system
08/12/2024 — Real-Time Customer Behavior Analysis	• Utilize the collected customer behavior data to identify patterns in the customer responses to incentives • Collaborate with Marketing & Communications Department to plan real-time incentive adjustments
08/12/2024 – 09/30/2024 — Continued Monitoring and Feedback Collection	• Feedback data collection: Customer website interaction, sales performance • Comparison with historical customer data to discern behavioral change from tailored incentives
10/07/2024 — Final Performance Review	• Comprehensive discussion of model performance • Cost-benefit analysis report

Change Management for Product Marketing Managers

- **Product Marketing Managers** will utilize PECS to develop personalized experiences

- **No complex workflow changes** needed

- Rather than **fully automating** the marketing pipeline, PECS **empowers** PMMs to develop experiences

- PMMs will see a **dashboard of customer audiences** and use their marketing knowledge to create data-driven marketing experiences

PECS Workflow

ENHANCING PRODUCT MARKETING MANAGERS WORKFLOW

1 - CUSTOMERS	2 - ANALYSIS	3 - SEGMENTATION DASHBOARD	4 - PMMS/AB TEST	5 - EXPERIENCE DELIVERY
Customers enter the side and behave as normal	The Segmentation Model creates the segments with each id	PMMs use an Internal Dashboard to analyze the customer segment data	PMMs decide the best experience for each segment and can **AB test** to measure effectiveness	Work with the Webmaster to deploy the experiences on the website for each id customer

Workflow involves collaboration from Marketing and the Webmaster to carry out PECS

Appendix

Considerations

Assumptions

- Active Readers are the **most engaged customers** given their frequency is higher compared to other segments.

- Remaining Active Readers, Occasional Readers, Sparse Readers and New Readers, that is, all the customers that are not part of the "most engaged customers" total make up the **"other customers"** population.

	Active Readers	**Occasional Readers**	**Sparse Readers**	**New Readers**
Average Spend	$364	$167	$63	$42
Frequency	11	6	3	2
Customers	388	923	10,314	4,552

Given Parameters

- The data given is only a sample.
  - Calculations and data findings are therefore based on the sample group, but can be translated/scaled accordingly to the total customer population.

- Company's revenue is about $50M per year.

- Approach delivers the following:
  - +20% incremental sales among the most engaged 15% of customers
  - Statistically significant but small improvement (3–5%) among other customers

- The belief is the CMO and Webmaster will accept the approach for the top 15% of customers

Calculation Methodology/Breakdown of Gains

	15% of Most Engaged Customers	Other Customers
Increase in Sales	15% x 388 (Active Reader Customers) = ~58 388 (Active Readers Customers) x $364 (Average Spend of Active Readers) = $141,232 $141,232 x 20% = $28,246.40	Remaining Active Readers Customers = 85% x 388 = ~330 330 (Remaining Active Readers) x $364 (Average Spend) = $120,120 $120,120 x 3% = $3,603.60 $120,120 x 4% = $4,804.80 $120,120 x 5% = $6,006 $3,603.60 + $4,804.80 + $6,006 ÷ 3 = $4,804.80 Remaining Customers = 923 + 10,314 + 4,552 = 15,789 Number of Customers Impacted = (3% x 15,789) + (4% x 15,789) + (5% x 15,789) = ~474 + ~632 + ~789 = 1,895 ÷ 3 = ~632 Average Spend of Remaining Customers = $167 + $63 + $42 = $272 632 (Remaining Customers) x $272 (Average Spend) = $171,904 $171,904 x 3% = $5,157.12 $171,904 x 4% = $6,876.16 $171,904 x 5% = $8,595.20 $5,157.12 + $6,876.16 + $8,595.20 = $20,628.48 ÷ 3 = $6,876.16 $4,804.80 + $6,876.16 = $11,680.96
Increase in Conversion Rate	**1% in Conversion Rate = $25,721** • Average Spend: $364 + $167 + 63 + $42 ÷ 4 = $636 ÷ 4 = $159 • Total Customers: 388 + 923 + 10,314 + 4,552 = 16,177 • $159 x 16,177 = $2,572,143 • 1% x $2,572,143 = $25,721 $25,721 x 10 = $257,210	

Calculation Methodology/Breakdown of Costs

	Active Readers	Occasional Readers	Sparse Readers	New Readers
Cost of Incentive Per Customer	$10	$0.50	$10	$4

Incentives Cost	$10 Per Active Reader, 58 Customers $10 x 58 = $580
Implementation Costs	Software Updates: • Update internal systems by programming incentives $1,500
Labor Costs	Software Engineer Salary: $60/Hour Hours: 15 Hours $60 x 15 = $900