



Beyond “Most-Popular”

Unlocking \$1 Million in New Revenue — starting with a 20 % lift (\$200 k) from your top 15 % customers

Citrine Consulting — Akshat Gupta, Amber Keahey, Emily Zhang, Hui Meng, Lexi Lin

Presented to ABC Bookstore’s Chief Marketing Officer & Webmaster

May 2025

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CITRINE CONSULTING — Your Cross-Functional Growth Squad

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Hui Meng
Project Manager

- 12 yrs leading data-driven growth roll-outs
- Keeps scope, timeline, and budget on track



Amber Keahey
Business Lead

- Ex-Sr Director CRM @ Fortune-500 retailer
- Bridges marketing vision to tech execution



Akshat Gupta
Data Science
Consultant

- Built Amazon-scale real-time recommender
- IEEE-published on scalable ML for e-commerce



Emily Zhang
Data Science
Consultant

- PhD Statistics; 30+ A/B tests for apparel giant
- Expert in experiment design & storytelling KPIs



Lexi Lin
Data Science
Consultant

- Full-stack Machine Learning engineer;
- AWS-certified, Champion of privacy-safe customer data flows

We're here to turn your data into +20% incremental sales from the top 15% of customers—while keeping effort and risk low for your teams.

Personalized Incentives Drive +20 % Lift on Your Top 15 % Customers



- **Why change a working formula?**

“Most-Popular” ≠ Most Profitable

A single banner ignores huge value differences inside our customer base.

- **What we can do to increase the revenue?**

1. **Group shoppers** by buying behaviour and value
2. Assign the most compelling offer to **each group**
3. Show the personalised offer **instantly** when they visit
4. Review performance **overnight** and auto-fine-tune for tomorrow

- **Decision**

1. **Green-light** (4-week Phase 1; 8-week timeline full rollout).
1. Go-live target **July 7** for Phase 1.

- **Financial impact (year 1, USD)**

Metric	Phase 1 – VIP Pilot(15 % of customers)	Full Roll-out(100 % of customers)
Incremental net revenue	≈ \$0.20 M / yr	≈ \$1.0 M / yr
Contribution margin (38 %)	\$0.076 M EBIT	\$0.38 M EBIT
Programme cost (one-time)	\$0.05 M	\$0.10 M
Net EBIT gain (yr 1)	\$0.026 M	\$0.28 M
Pay-back	≈ 8 months	≈ 3 months
1-year ROI	≈ 1.5 ×	≈ 3 ×

** Programme cost (\$0.10 M) is fully loaded and outsourced:*

- Cloud & MLOps run-rate (AWS + Redis) ≈ \$15 k
- UX / creative assets for four offer variants ≈ \$10 k
- End-to-end consulting & implementation (our data-science team) ≈ \$75 k

Phase 1 cost covers cloud + creative for 4 offer variants + our consulting & deployment. After success criteria met, scaling to 100 % needs no new platform spend—only incremental creative refresh.

After the first year, the program continues at a modest \$15 k/year operating expense while the revenue uplift—and associated EBIT—keeps flowing.

All Customers Can Be Categorized Into 1 of 4 Segments Based on Purchasing Behavior

Meet Grace.



Grace visited the ABC Bookstore website last week. Historically, she's purchased 15 books from ABC, totally \$400.

Our Data-Driven Solution

Our business rules engine categorizes her as a **VIP** customer based on:

- frequency of visits,
- quantity purchased,
- \$ spending.

Personalized Recommendation

We recommend popular titles amongst Grace's segment (VIPs) to Grace.

Model Performance

Our solution improves upon both **revenue** and **hit rate**. Simulation indicates that the engine-based recommendations yield **10–12% more revenue** over time compared to baseline. Currently, customers like 2.5 out of every 5 recommendations (50% hit rate). With the new method, that increases to 3.25 out of 5 (65% hit rate).

Personalized Recommendations and Segment-Based Incentives Encourage Customer Engagement



VIPs

Phase I Focus

- Most recent visitors
- Highest purchasing frequency
- Biggest spenders
- Generates 65% of current revenue

Focus on **recommendations** (no discount incentive) and brand **community** (book review forums, events)
"Like [genre]? Take a peek at what's flying off our shelves."

Wandering Enthusiasts

- Similar to VIPs, but **have long-since visited**
- Generates 25.6% of current revenue

Focus on **reeling them back in**.
"Dive back in with BOGO 50%."

Value Hunters

- Buyers on a budget: low frequency and low spending
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Focus on a nice **discount**.
"Take 15% off your next order—on us."

At Risk / Newcomers

- Similar to Value Hunters, but **have long-since visited**
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Targeting the Top 15% of Customers Yields \$0.2M Revenue Lift with Segment-Based Recommendations Only



Customer Base Universe

TOP VIPs

VIPs

Wandering Enthusiasts

Value Hunters

At Risk / Newcomers

The top 60% of VIPs = the most engaged 15% of the customer base universe. With segment-based recommendations, we project TOP VIPs to contribute a **20% increase in incremental revenue.**

This segment is recommendation-only (no discount incentive), giving your marketing & web teams **greater flexibility.**

TOP VIPs

→ ***TARGET for Phase 1***

Targeting the Top 15% of Customers Yields \$0.2M Revenue Lift with Segment-Based Recommendations Only



Segment	Baseline revenue*	Gross uplift	Promo-cost drag	Net incremental revenue
VIPs	\$ 32.4 M	+1 % (\$ 0.32 M)	–	\$ 0.32 M
TOP VIPs (Top 60%)	20.0 M	+1 % (0.20 M)	–	0.20 M
Bottom VIPs (40%)	12.4 M	+1 % (12.4 M)	–	0.124 M
Wandering Enthusiasts	12.8 M	+5 % (0.64 M)	–25 % (-0.16M)	0.48 M
Value Hunters	2.85 M	+5 % (0.14 M)	–15 % (-0.02 M)	0.12 M
At Risks / Newcomers	1.91 M	+5 % (0.10 M)	–10% (-0.01 M)	0.09 M
Total	\$ 50 M	–	–	\$ 1.01 M

Phase 1: EBIT \$0.076 M • Program cost \$0.05 M • Pay-back 8 months • Year-1 ROI > 1.5×
Full Roll-out: EBIT \$0.38 M • Program cost \$0.10 M • Pay-back 3 months • Year-1 ROI > 3×

**Baseline revenue = each cluster's revenue in the Excel file scaled so the four clusters sum to the company's stated \$50 M annual revenue.
 The gross-uplift assumptions (+1 %, +5 %) are intentionally conservative, and the "promo-cost drag" adjustment already nets out the value of all discounts to arrive at true incremental revenue.*

Example: VIP Customer's Journey



Stage 1: Customer Segment Identification

Grace's Historical Data

<1 month since last purchase

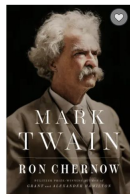
Has purchased 15 books from ABC Bookstore, totaling about \$400

Grace is an VIP Customer

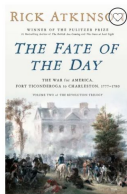
Stage 2: Promotional tactic deployed

[USER 001 Name], like [genre]? Take a peek at what's flying off our shelves.

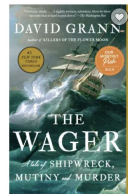
Top picks from readers like you



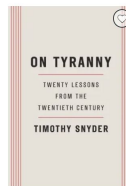
Mark Twain
by Ron Chernow
★★★★★



The Fate of the Day: The War for America, Fort...
by Rick Atkinson
★★★★★



The Wager: A Tale of Shipwreck, Mutiny and Murder
by David Grann
★★★★★



On Tyranny: Twenty Lessons from the Twentieth Century
by Timothy Snyder
★★★★★

Get exclusive early access to the hottest new books before anyone else—reserved just for our VIP customers!

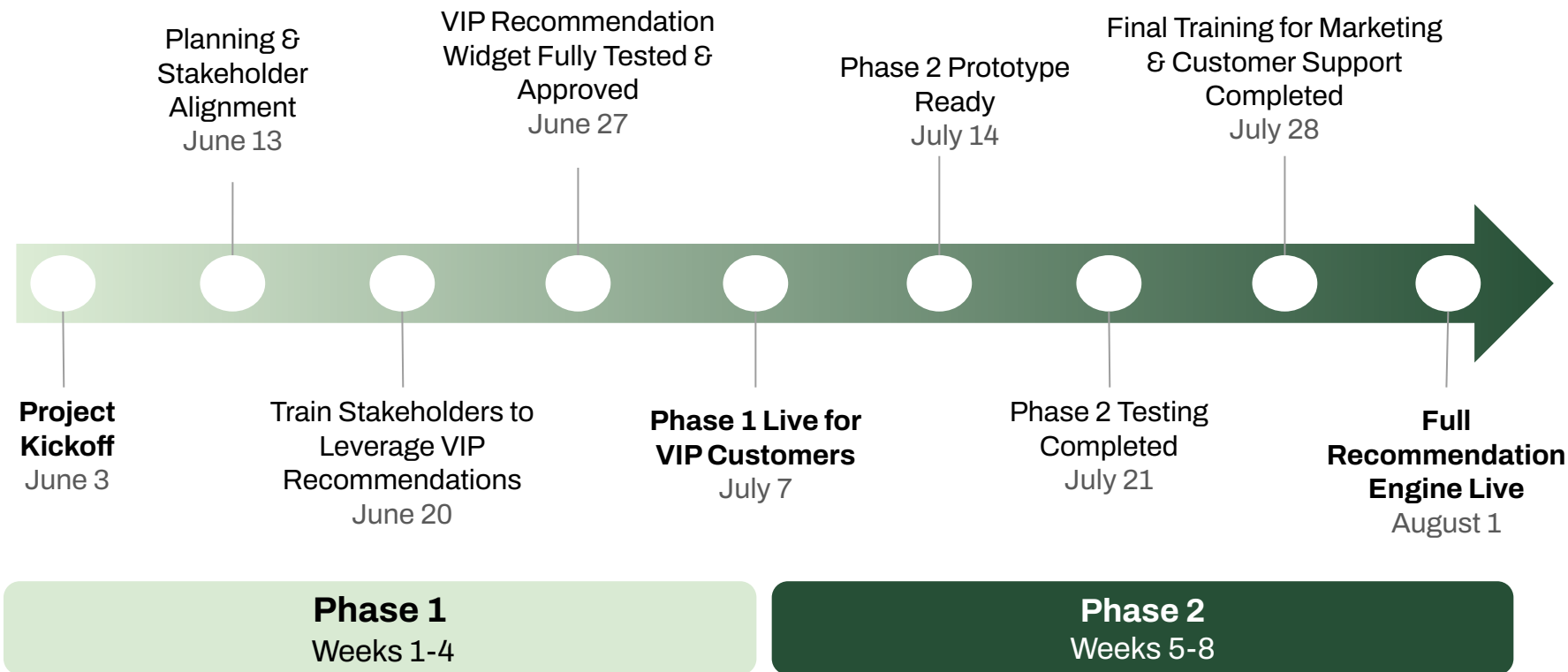
→ message & recommendations

→ suggested items (top titles from top genres within VIP segment)

→ exclusive segment event & privileges

** recommended books rotate between most popular vs. less popular titles within the segment's top genres to reduce inventory holding costs.*

Our 8-Week Implementation Plan that Balances Technical Development & Stakeholder Engagement



Our Change Management Strategies for Full Handoff



Training

Business Units

- How to interpret and use segments

Data Units

- How to host and maintain model



Integration

Web Implementation

- Collaborate with internal team to set up full stack implementation

Internal Ownership

- Establish owner and governing framework



Documentation

- Complete documentation of model training and retraining, data and technological dependencies
- Record of business application and interpretation



Support Transition

30-day post-handoff support

- Answering any business or technical questions

Our Statement of Work



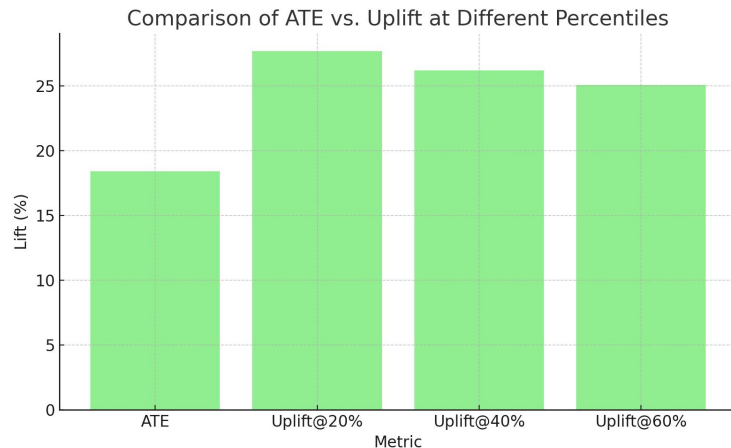
Section	Key Points
Project	Segment-Driven Recommendation Engine Replace “Most-Popular” banner with personalized offers
Objectives	<ul style="list-style-type: none"> • Phase 1: + \$0.2 M net revenue • Pay-back < 8 month • Go-live Jul 7, 2025 • Full Engine: + \$1 M net revenue • Pay-back < 3 month • Go-live Aug 1, 2025
Scope (Outsourced)	<ol style="list-style-type: none"> 1. Analytics & Model – RFM + K-Means, 4 segments 2. Offer Design – copy & creative for 4 incentives 3. Engineering – real-time scorer 4. Pilot & Roll-out – 1-week A/B → 100 % traffic 5. Handover – docs + 2 training sessions
Timeline	<ul style="list-style-type: none"> • Kick-off Jun 3 • Sprint 1 starts June 9 • Begin Stakeholder Training June 20 • Phase 1 Complete Jun 27 • Phase 1 Live for VIP customers Jul 7 • Phase 2 Complete Jul 14 • Final Training Completed July 28 • Full Recommendation Engine Live Aug 1 • Soft Handoff Aug 8 • Final Handoff Sep 7
Deliverables	<ul style="list-style-type: none"> ✓ Segmentation rules & code repo ✓ Offer assets (images, copy) ✓ Deployed micro-service & MLOps run book ✓ Stakeholder organization and training ✓ Pilot uplift report
Roles	<i>Citrine Consulting:</i> end-to-end delivery & QA <i>Client:</i> provide data access, approve creatives
Fees	Phase 1 \$50k (fixed): <ul style="list-style-type: none"> • \$15 k cloud/MLOps (yr-1) • \$10 k UX/creative • \$25 k consulting & implementation Phase 2 Additional Cost \$50k (fixed): <ul style="list-style-type: none"> • \$50 k consulting & implementation Total Cost (fixed): \$100k
Payment	40 % kickoff • 30 % staging • 30 % go-live
Acceptance	Go-live stable 72 h, uplift ≥ +2 % AOV in pilot
Next Step	Approve SOW by June 7 → sprint start June 9

APPENDIX

Model Ranking Power: Precision in Identifying High-Impact Customers

The bar chart compares the overall Average Treatment Effect (ATE) against uplift measured at the top 20%, 40%, and 60% of customers ranked by predicted lift:

- **ATE (18.4%)** represents the average net increase across the entire population.
- **Uplift@20% (27.7%)** shows the highest incremental conversion among the top 20% indicating strong ranking power.
- **Uplift@40% (26.2%)** and **@60% (25.1%)** demonstrate how lift tapers as we include more customers.



The model effectively prioritizes high-impact customers: concentrating on the top 20% yields a conversion lift that's ~50% higher than the population average, underscoring strong discriminative performance

Projected Conversion boost from Recommendation Engine Deployment

'Where m_mean is the mean monetary spend by customers in that cluster'

Segment	Cluster	Net Lift (\$ k)	m_mean (\$)	Count	New Converters	Δ Conversion
VIPs	0	320	656.41	8 394	320 000 / 656.41 \approx 488	488 / 8 394 \approx 5.8%
Wandering Enthusiasts	1	480	257.53	8 443	480 000 / 257.53 \approx 1 864	1 864 / 8 443 \approx 22.1%
Value-Hunters	3	120	49.34	9 811	120 000 / 49.34 \approx 2 432	2 432 / 9 811 \approx 24.8%
At- Risk/Newcomers	2	90	46.25	7 024	90 000 / 46.25 \approx 1 946	1 946 / 7 024 \approx 27.7%
Total / Avg. lift		1 010 k	—	36 672	$\Sigma \approx$ 6 730	6 730 / 36 672 \approx 18.4%

Per-segment conversion uplift ranges from \approx **6%** (VIPs) to \approx **28%** (At-Risk).

Overall, the recommendation engine is expected to drive an \approx **18 %** lift in the number of customers converting.

Full roll-out: personalized recommendations and segment-based incentives encourage customer engagement



All customers receive personalized book recommendations, based on popular genres in their respective segment

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Customer's Journey: Example B



Stage 1: Customer Segment Identification

USER ID 002 DATA

Cold start; no RFM data on file

Previously abandoned their cart

**USER 002 is a
At Risk/Newcomer**

Stage 2: Promotional tactic deployed

Welcome! Enjoy 10% off your first order—on us.

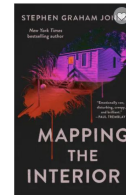
Top picks from readers like you



Great Big Beautiful Life
(B&N Exclusive Edition)
by Emily Henry
★★★★★



Remarkably Bright Creatures
(B&N Exclusive Edition)
by Shelby Van Pelt
★★★★★



Mapping the Interior
by Stephen Graham Jones
★★★★☆



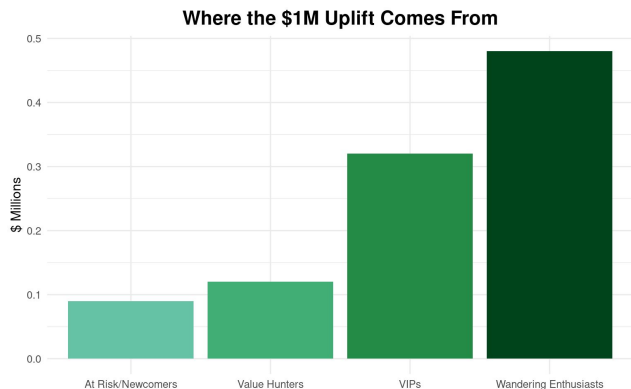
Silver Elite
by Dani Francis
★★★★★

→ message & discount

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(top titles from top
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Full Roll-out Projects over \$1M in Incremental Revenue



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STYLE GUIDE

BLANK TEMPLATE



Font = Archivo. **BOLD** for slide headers.

Deep Green for important information to highlight.

Mild Green = 2nd highlight