

VAUBAN 50

# From Purchase Prediction to Growth Strategy

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EcoShell™

# Business Strategy



## ✓ Predictive accuracy

Identify in real-time which users will convert & order a product



## ✓ Economic efficiency

Which marketing channel lead to the highest Profit - Traffic ratio?

## ✓ Growth Optimization

Which changes are needed to optimize the conversion rate?



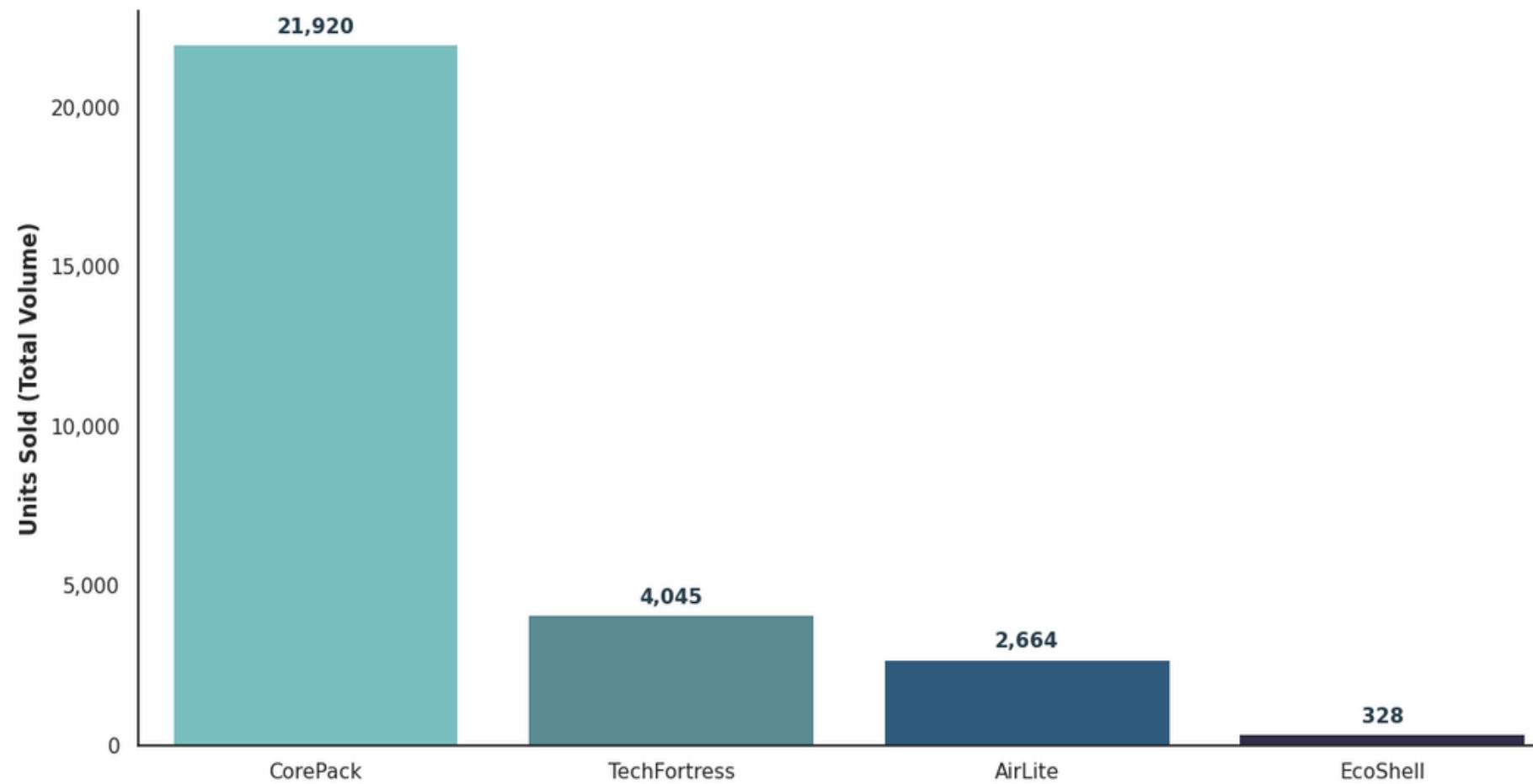
# Key Highlights

**93.49%**  
Testing Accuracy

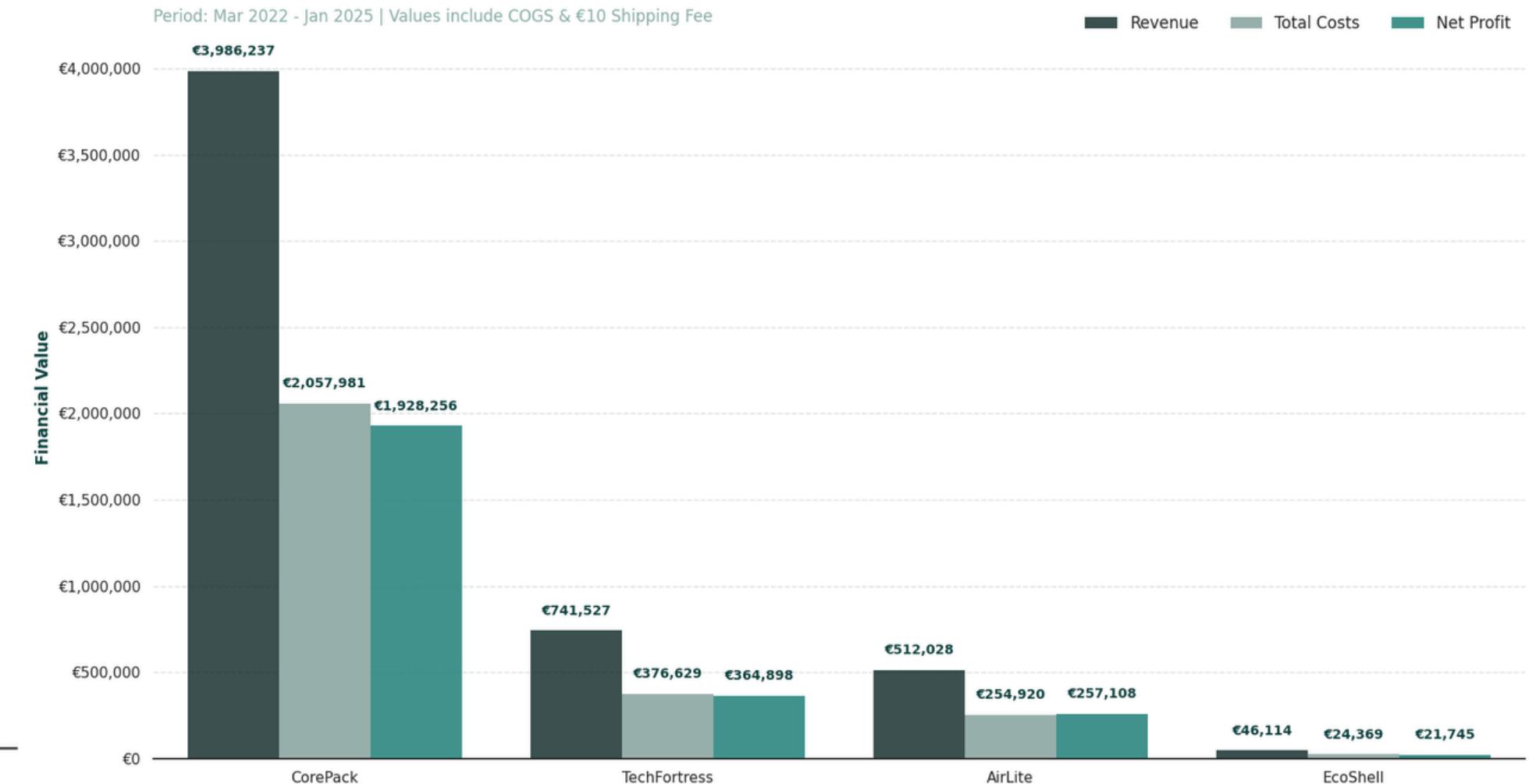
**14.36%**  
Clients Order

**€ 2.57 M**  
Total Net Profit

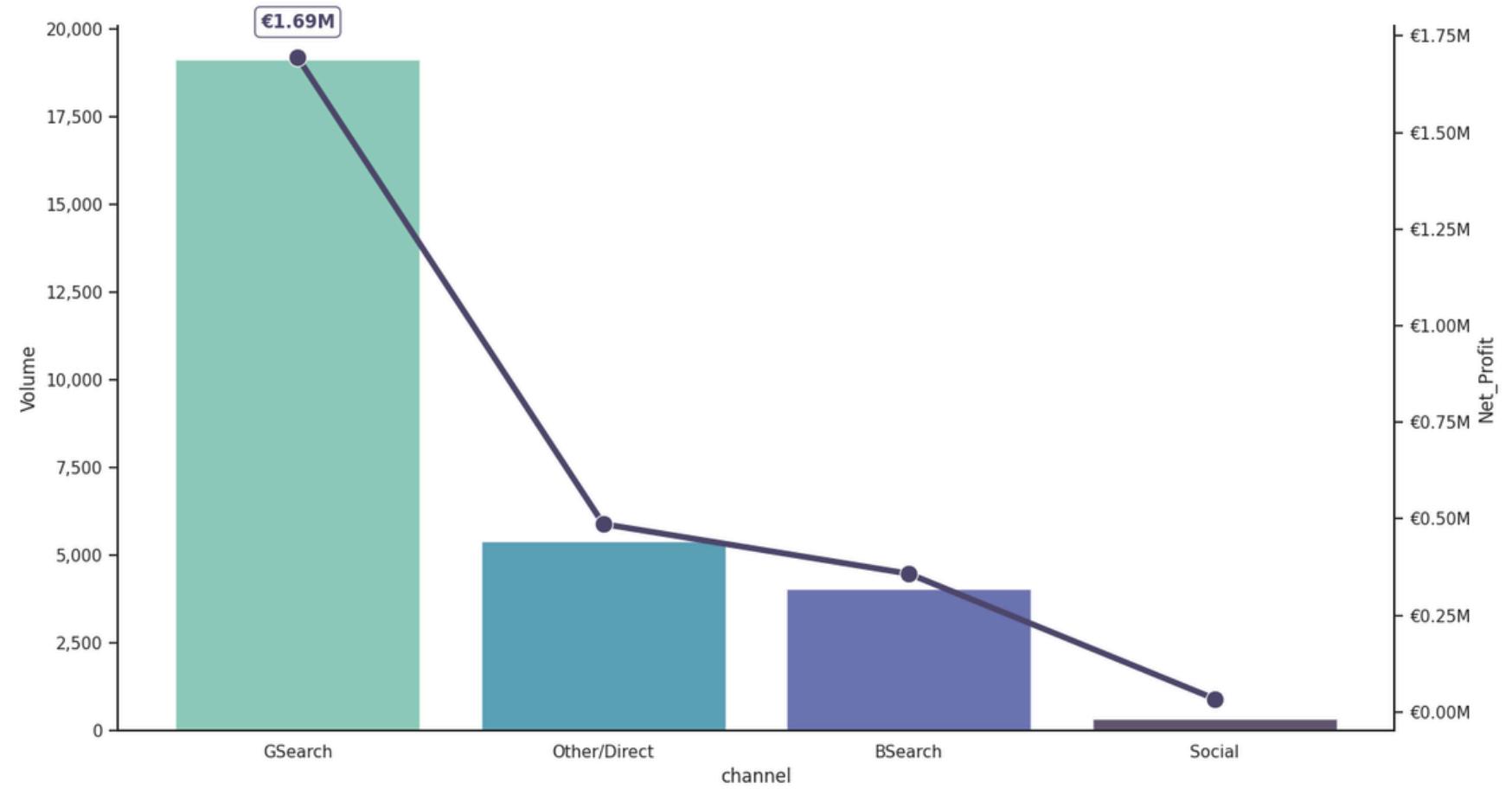
**Total Product Volume: 3-Year Historical Performance  
(Mar 2022 - Jan 2025)**



**Product Financial Breakdown: 3-Year Strategic View**



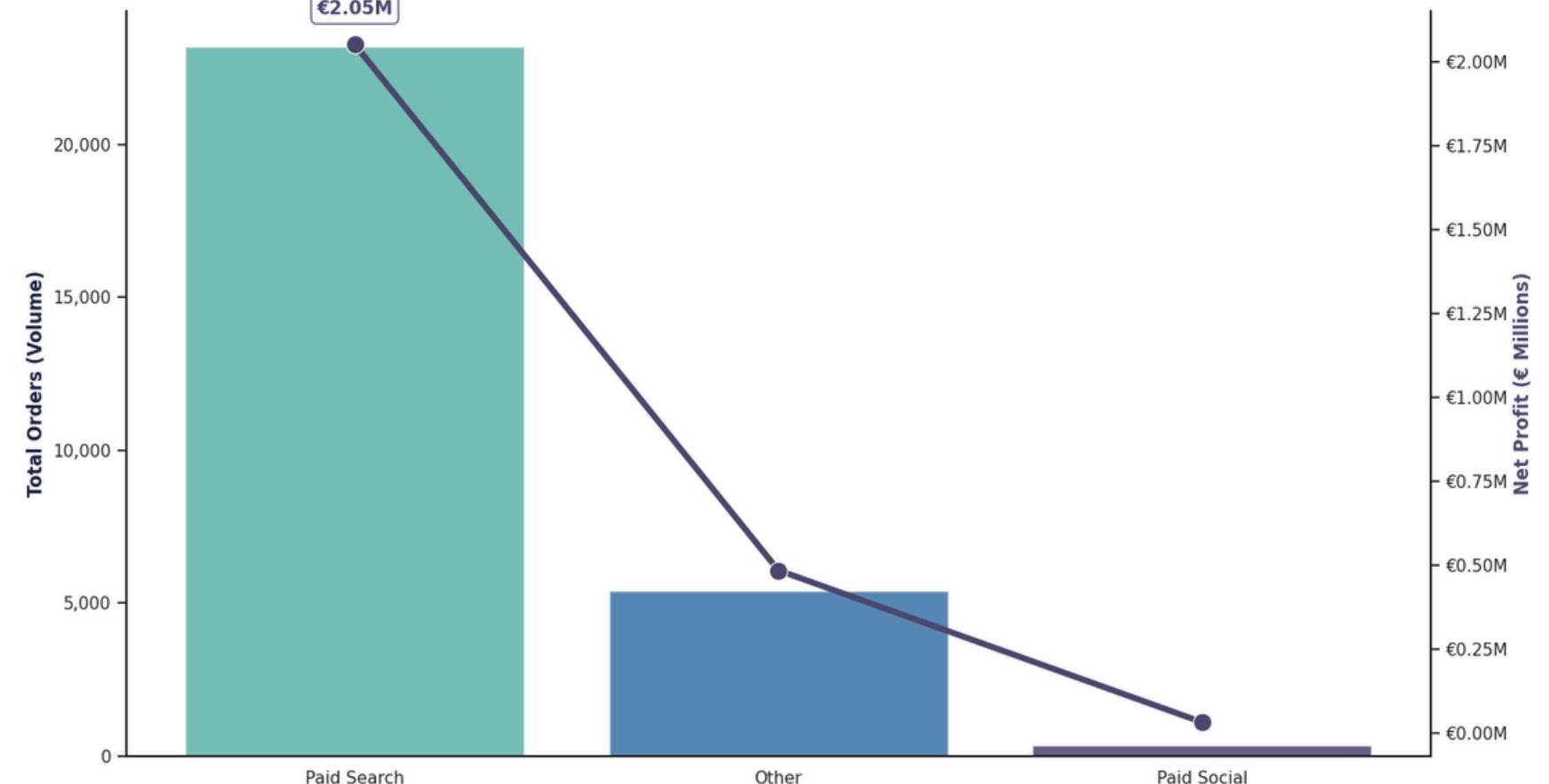
### 3-Year Channel Analysis: Volume vs. Net Profit



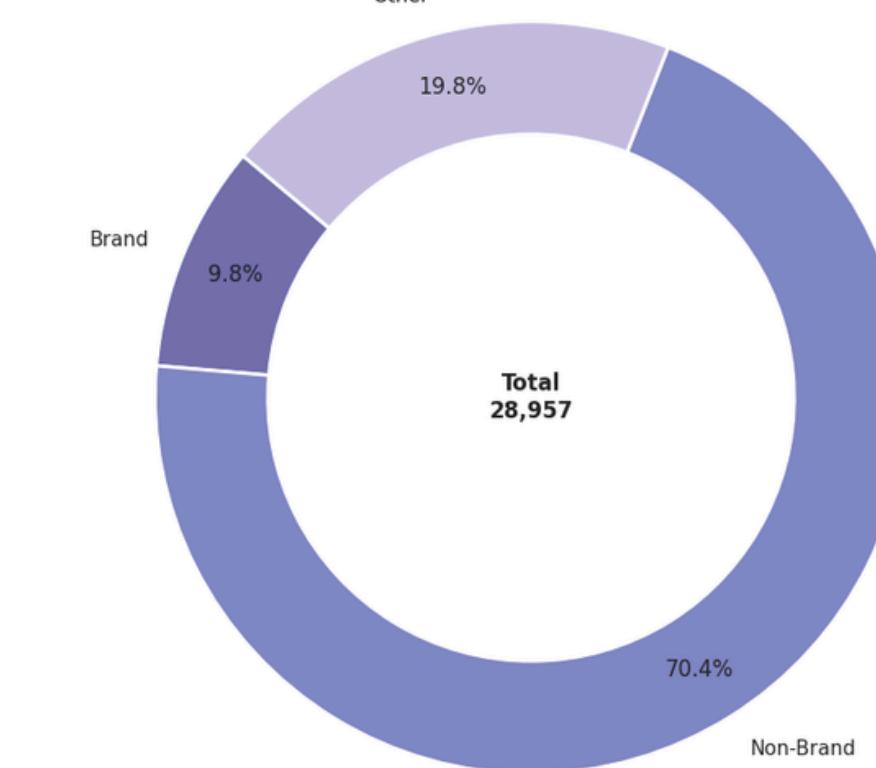
# Channel Engine For Profitable Growth

**GSearch generates:** 65.9% of Total Net Profit  
**Paid Search:** 79.8% of Total Net Profit

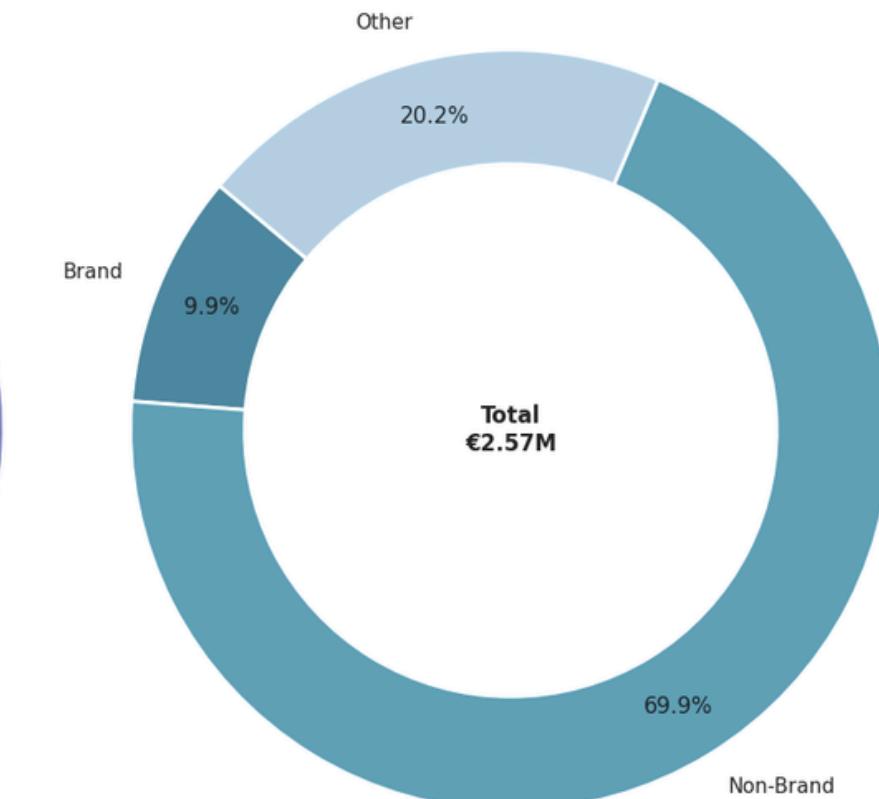
### Marketing Mix Efficiency: (3-Year Historical Performance)



### Order Volume Share

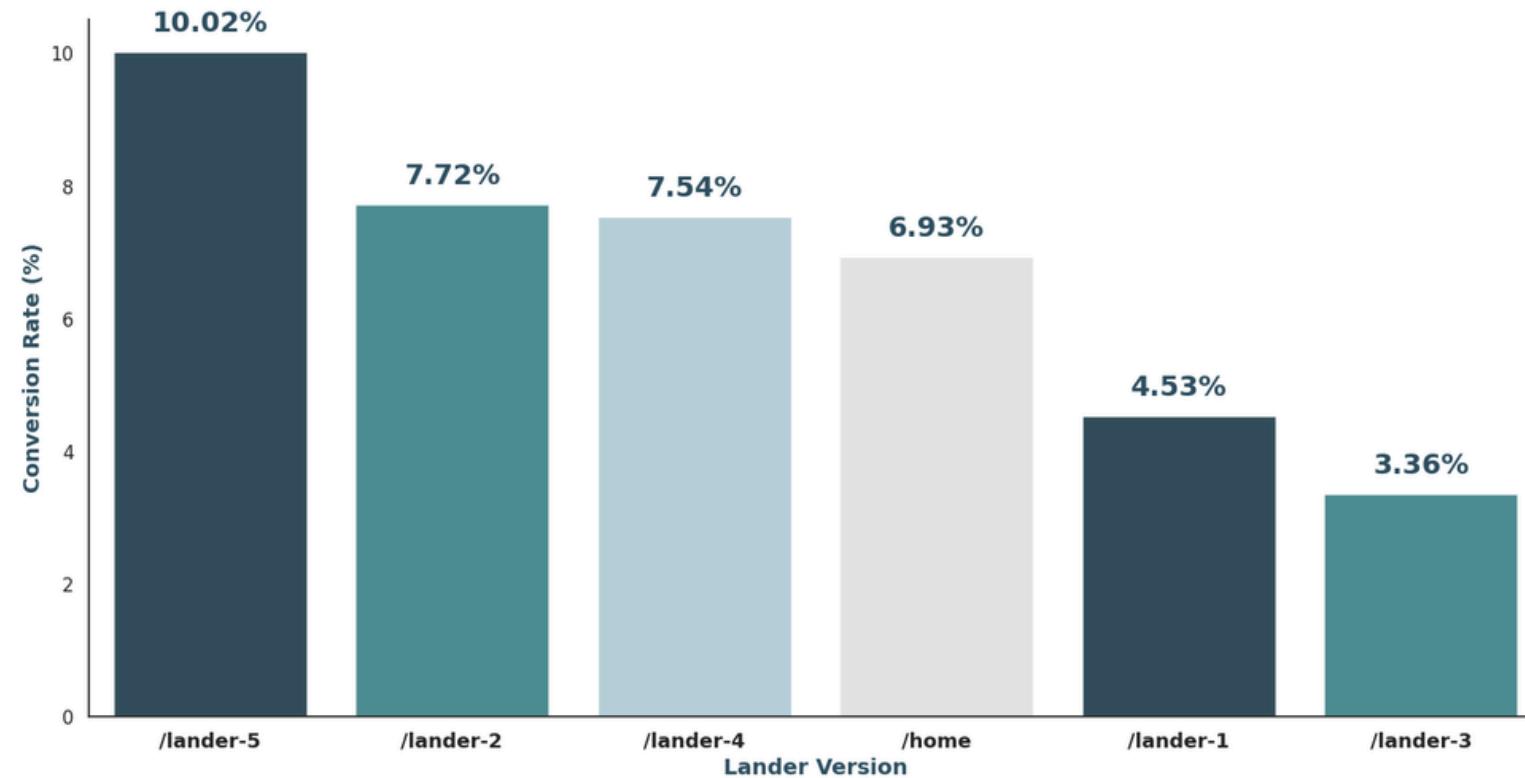


### Net Profit Share

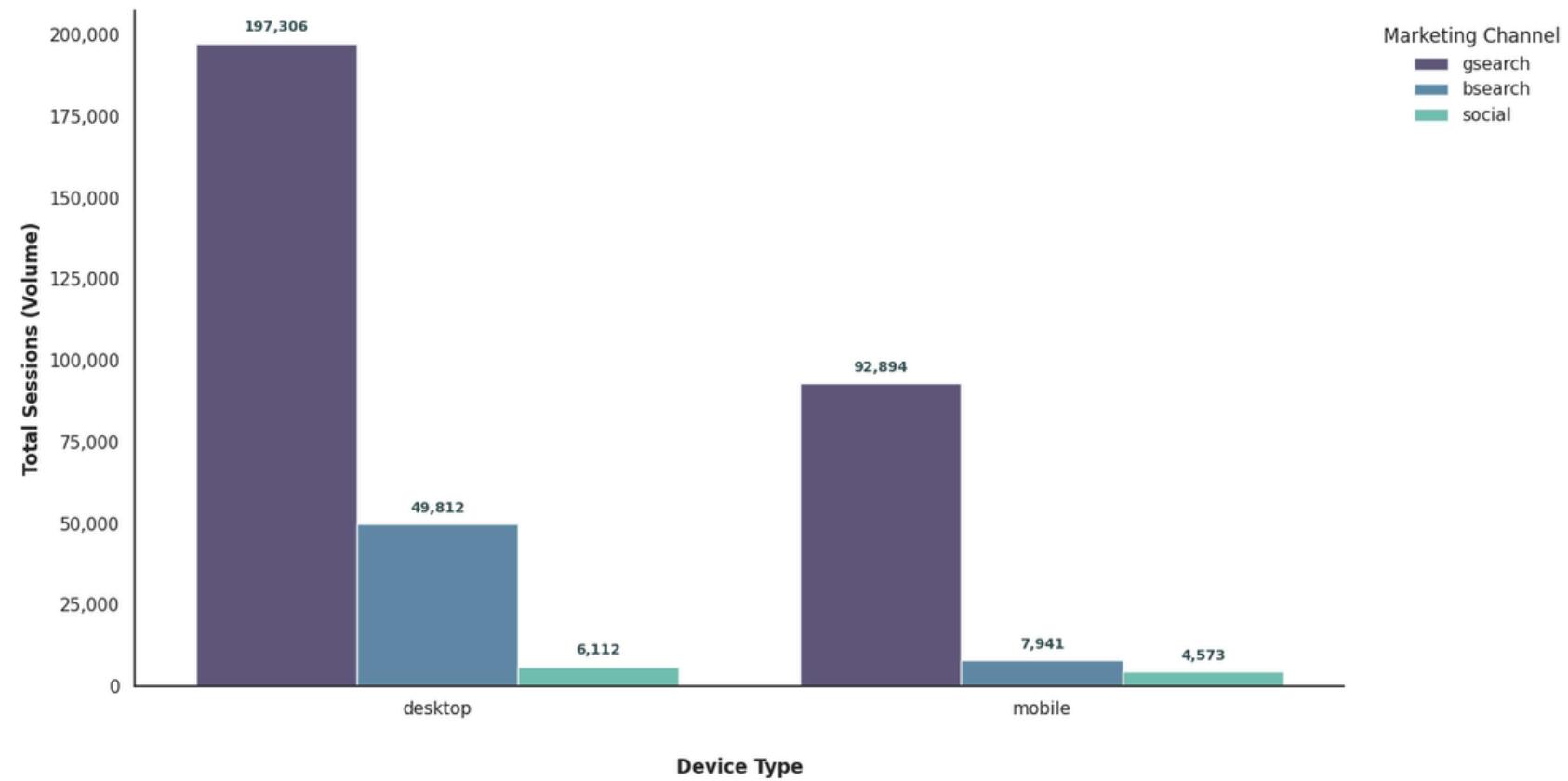


**Brand strategy impact:** 3 years analysis

## DESIGN EFFICIENCY: LANDING PAGE CONVERSION RATES



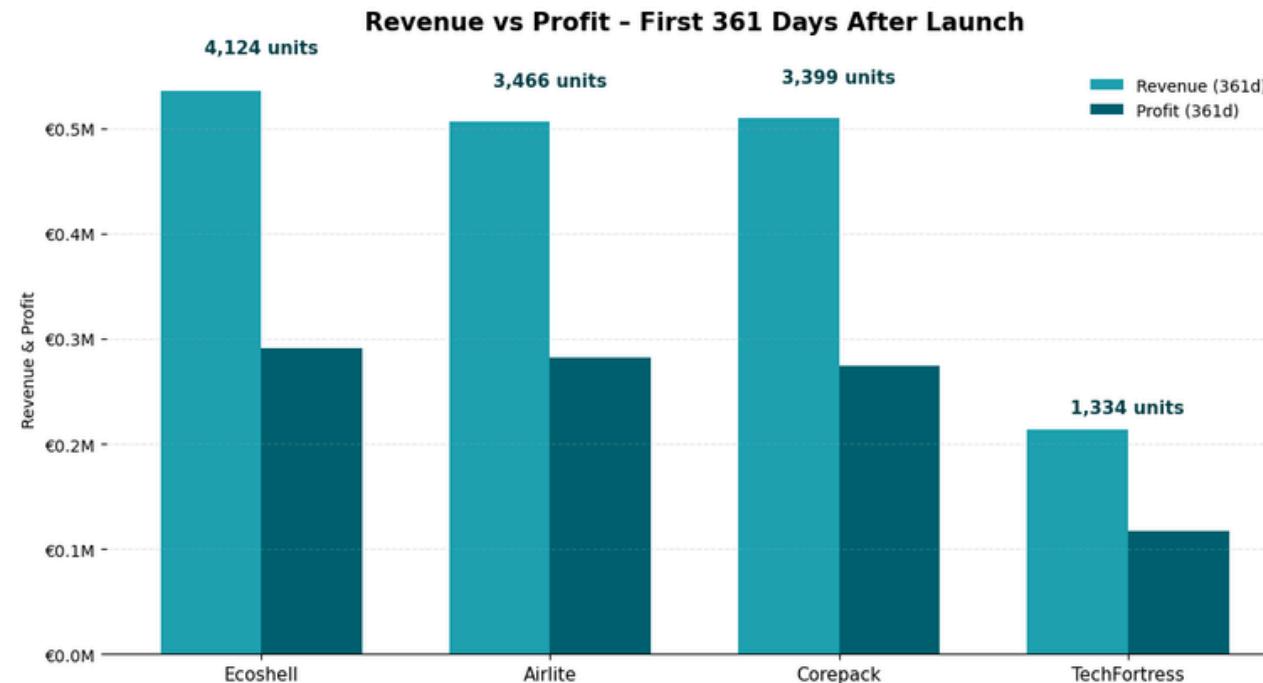
## CHANNEL USAGE BY DEVICE TYPE: TRAFFIC DISTRIBUTION (2022 - 2025)



# Future Strategic Plan

- Maximize GSearch & BSearch channels:
  - > **Maintain GSearch** as primary volume driver
  - > **Scale Bsearch** to capture high margin
- Invest in **Brand advertising** to boost loyalty & long-term customers relationship
- **Deploy Lander5:** primary entry point
- **Dual Device Strategy:**
  - > Desktop: refine “full-view.”
  - > Mobile: Improve connection features & UX, capture young mobile-reliant customers

# Business Idea: Smart Work-Hours Trigger



- **Ecoshell** is the most successful program in his first year since drop
- Profit margin are similar between each other ranging between 54 and 56%

About Ecoshell buyers...

78%

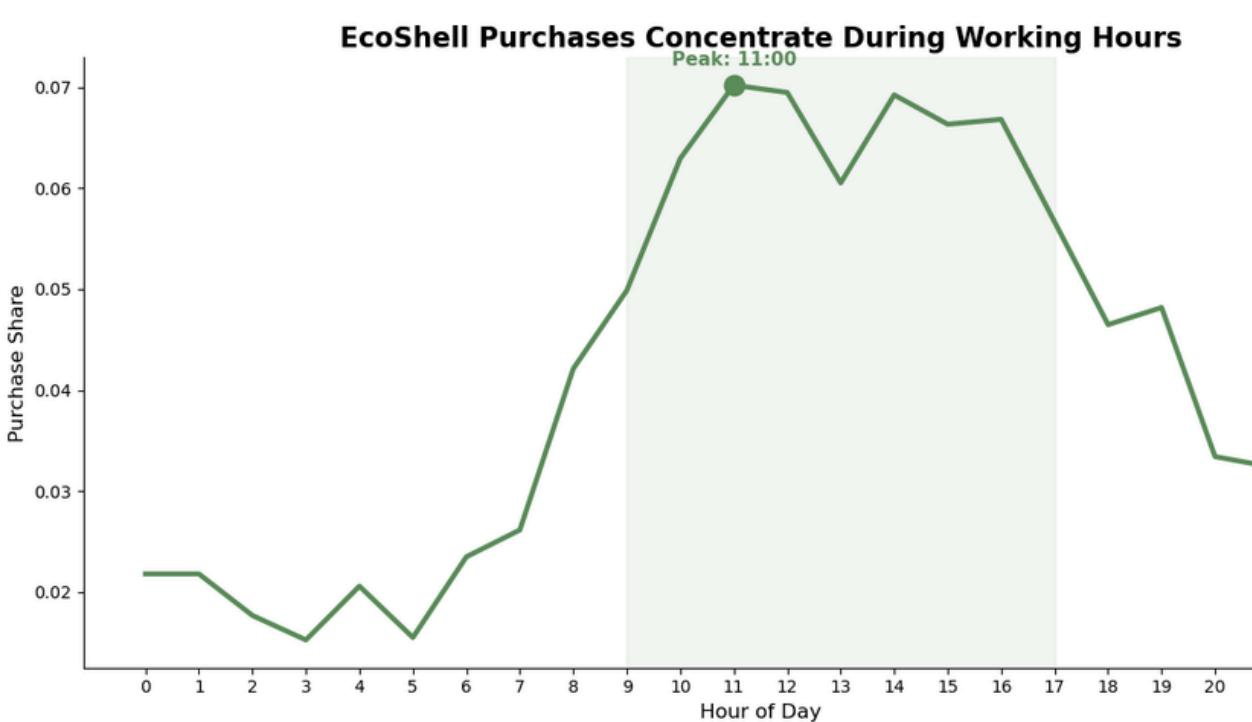
Come from paid research

85%

Access the site through a desktop

80%

Are new users

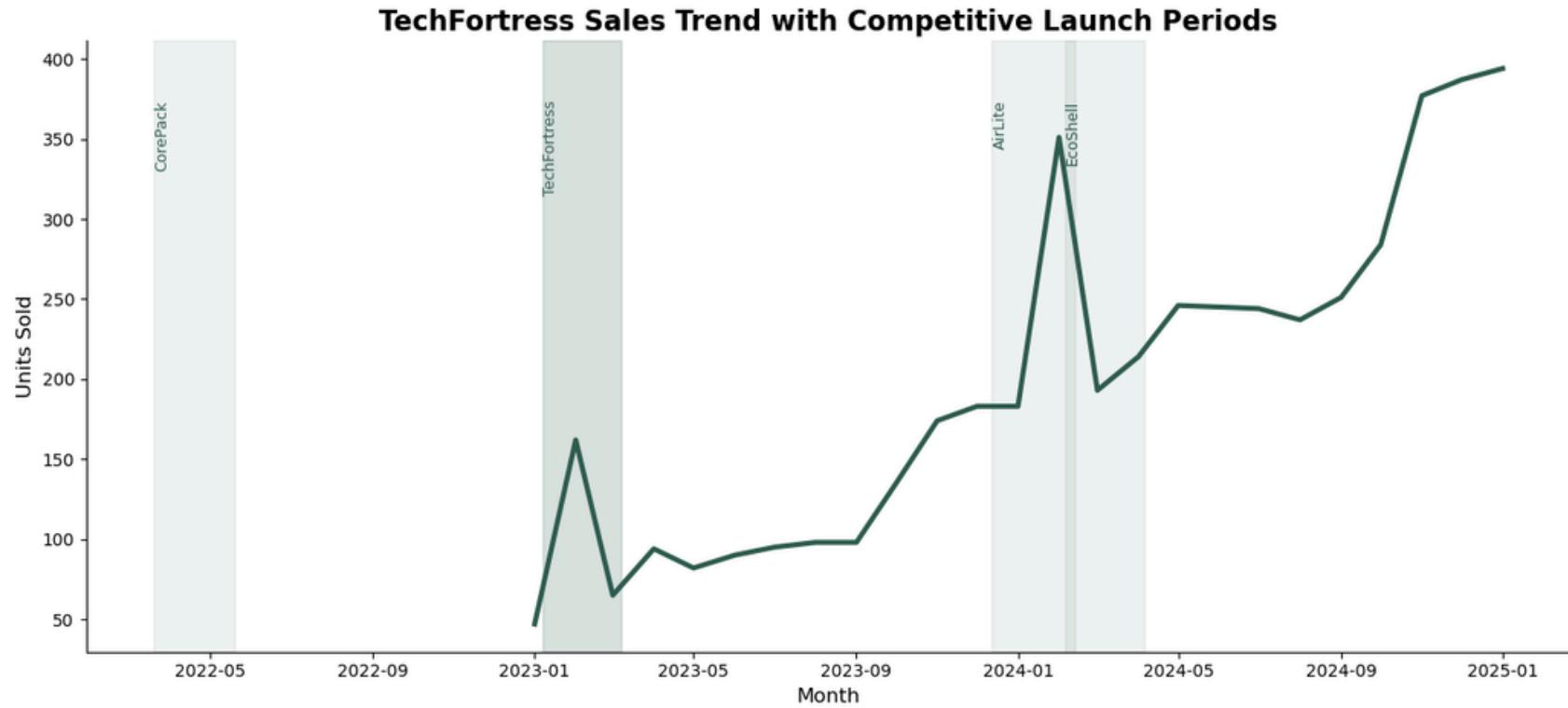


Persona: “The Desk Researcher”

- **24-34** years old
- **Young professionals** - consistent with desktop, daytime behavior
- **Rational decision-maker**
- **Sustainability**-conscious
- Urban commuter
- **How to target:** When a paid search comes through a desktop in the 10-16 peak hour period, an automatic professional landing page is triggered, with a personalized design and slogan such as “Designed for modern professionals. Free 30-day returns.”



# Business Idea: Differentiation Strategy



- 1 **TechFortress** had the **lowest** first-year **revenue** and profit among the four products
- 2 **Peak** Before EcoShell Launch
- 3 **Drop** After EcoShell Launch



## Business Rationale

**Pattern:** substitution effect due to segmentation overlap, not feature overlap.

Confirmed by the user metrics such as device types, that are mostly similar.

To reduce competition within the portfolio, we recommend **repositioning TechFortress as a premium commuter solution rather than a feature-upgraded CorePack**

## Strategic Impact

- Differentiates TechFortress from EcoShell
- Shifts from feature-based comparison to ecosystem value
- Supports premium tier positioning
- Increases average order value

## Proposed Strategy

Launch a “Commuter Tech Bundle” including:

- Laptop sleeve
- Cable organizer
- Portable charger

Positioned as:

**“The Complete Commuter Tech Setup.”**

# Technical section: Binary model

## Granularity level

- website\_session\_id

## Time Window

- Train: 1 y 8m 11d
- Validate: 6m 29d
- Test : 6m 29d
- Holdout: 1m 18d

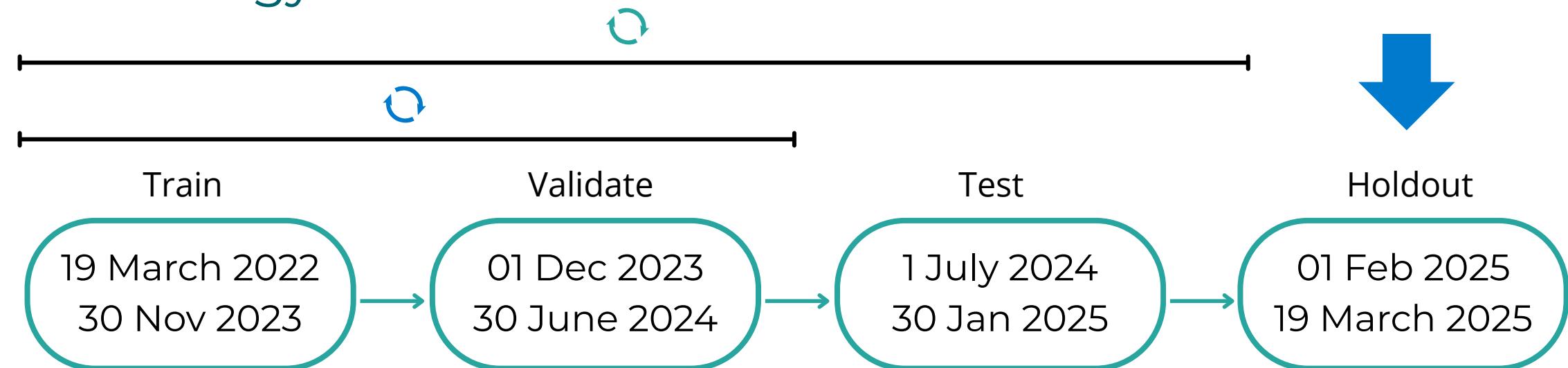
## Feature Engineering

- Contextual features
- Behavioral features

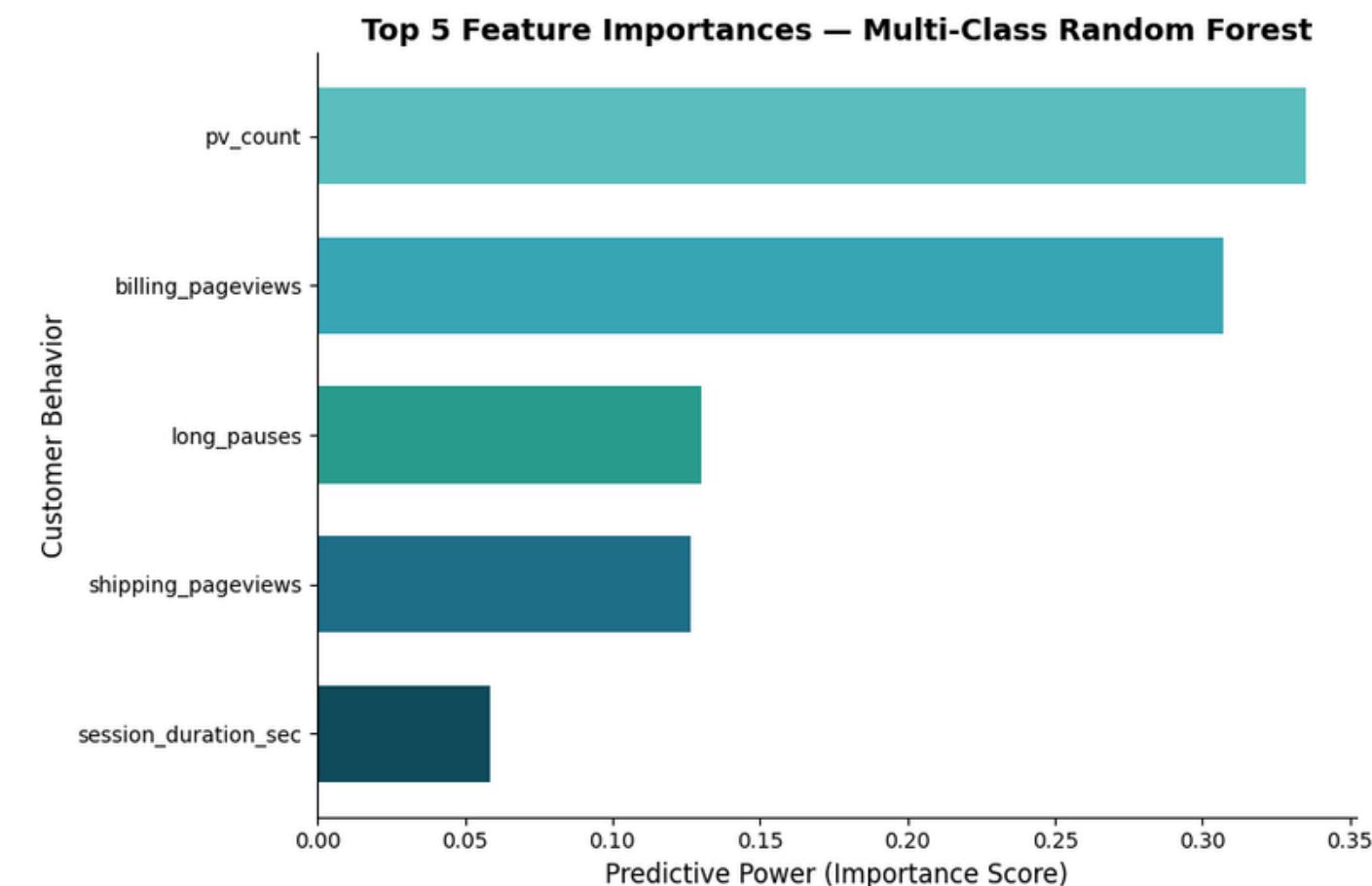
## Feature Selection

- Correlation analysis
  - Threshold = 0.85
- Best feature importance
- Random forest pruning
- Manual testing

## Methodology



## Top 5 importance feature scores



# Binary model metrics in dept

## Class unbalance

- Conversion rate
- Class weighting

## Models Selection

- Lasso Regression
- Ridge Regression
- Random Forest
- Gradient Boosted Trees

## Hyperparameter tuning

Nested for-loop

- best\_val\_auc=0.9788
- maxDepth= 5
- maxIter= 100
- stepSize= 0.1

Aggregate prediction  
max probability to user  
level

## Best model criteria

- No overfitting

Metric	Train	Validate
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AUC Score 0.9819 0.9789

Accuracy 96.1% 95.9%

- Performance

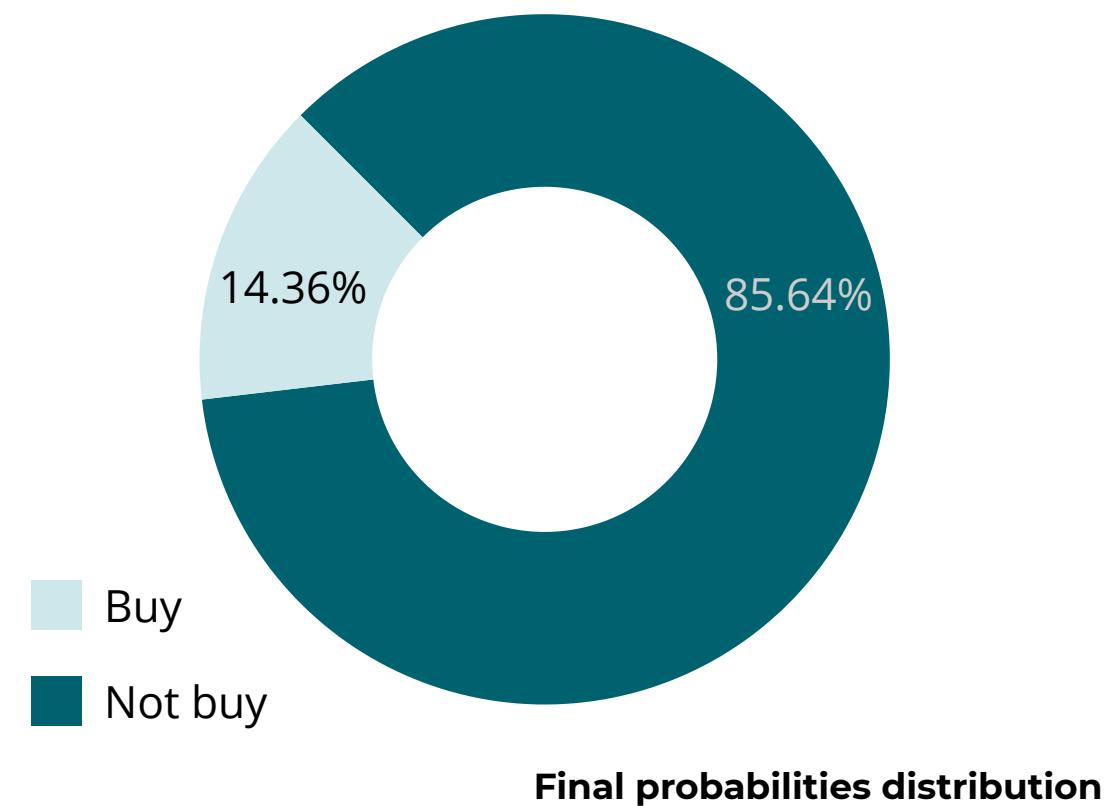
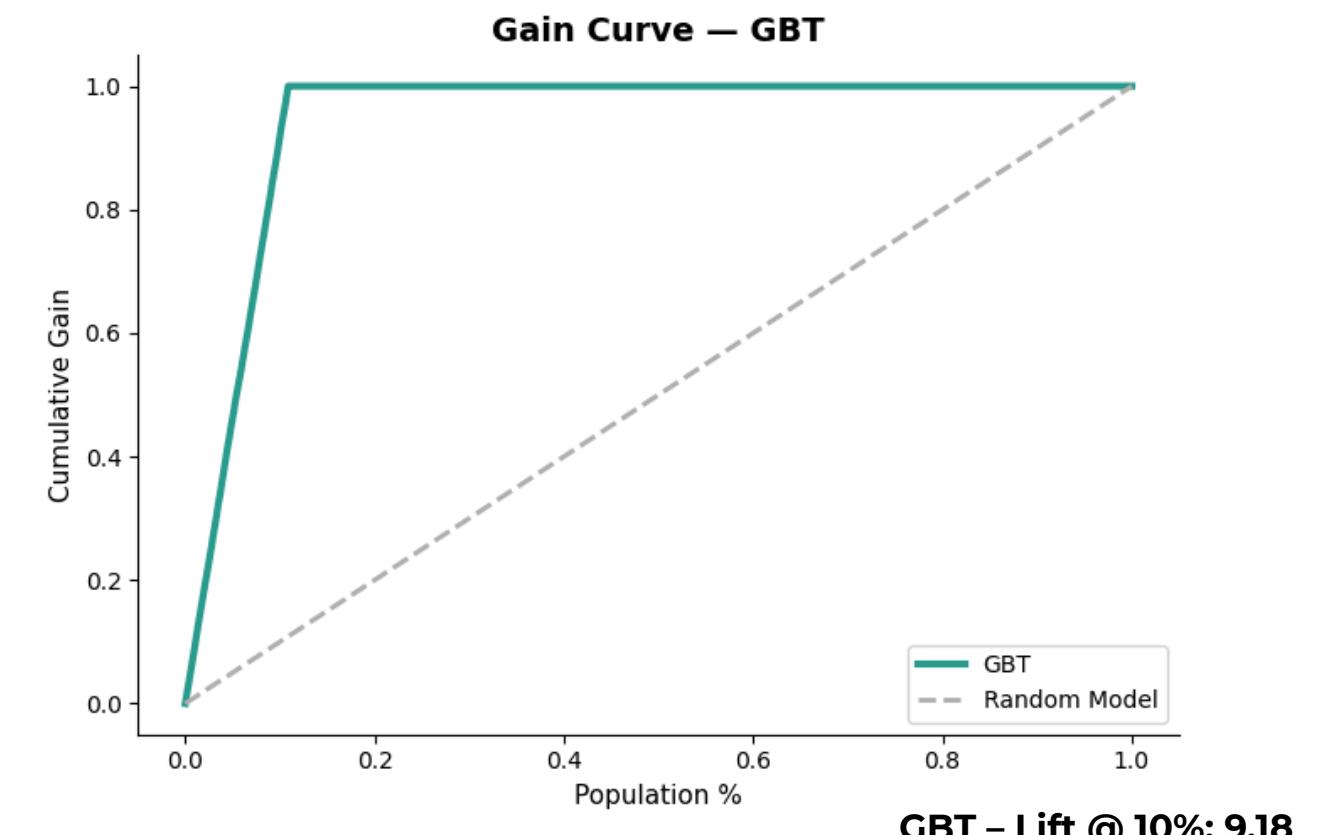
Metric	Validate	Train
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AUC Score 0.9789 0.92

Accuracy 95.92% 94%

## Confusion matrix

		0	1
0	103,229	273	
1	4,450	7,691	



# Multi Class Model: how it differed



## Feature Selection

- Combination of **correlation** filtering with **visual inspection** of class separability
- 14 features selected
- Product-specific** page views dominate product choice

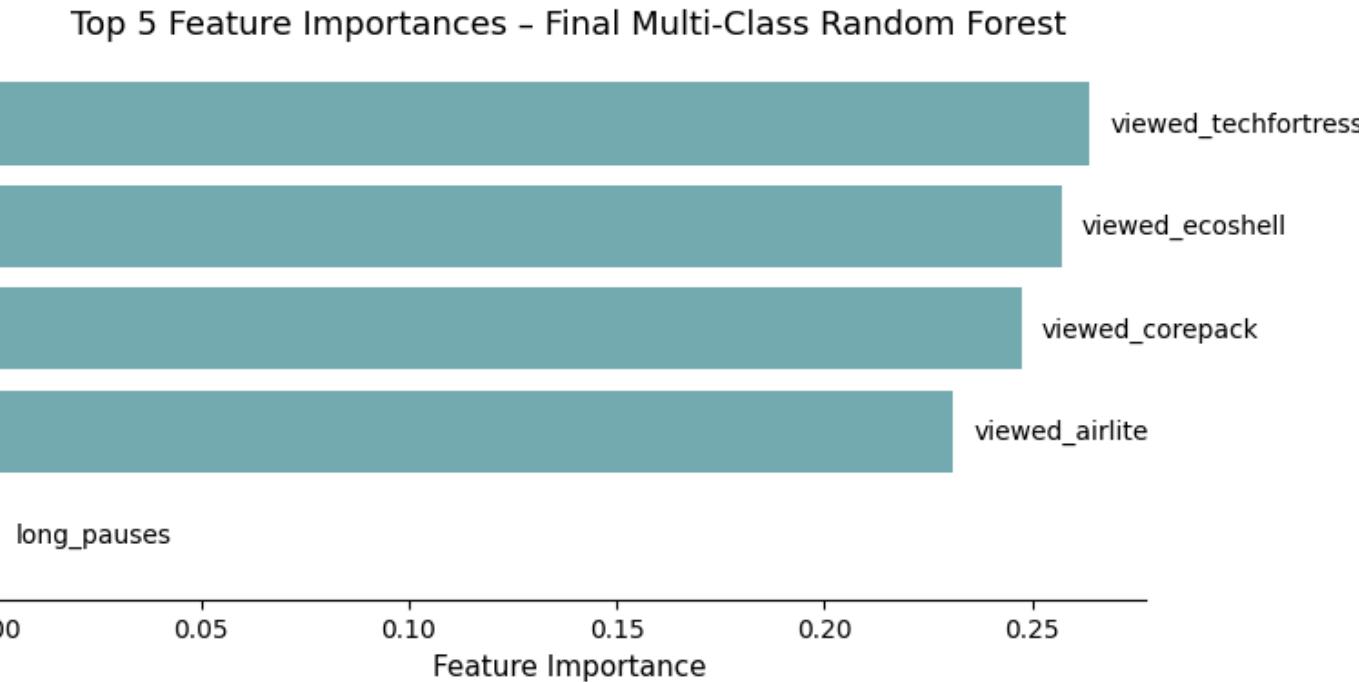
## Model Training

- Product 4 was only added in the testing phase, where **sampling** was applied.
- Model tested: **Random Forest** and **Linear regression**, both model performed similarly
- Random forest was chosen for its better performance with **imbalanced data**.
- The target variable is **primary\_product\_id** to ensure a single predicted winner.

## Final aggregation

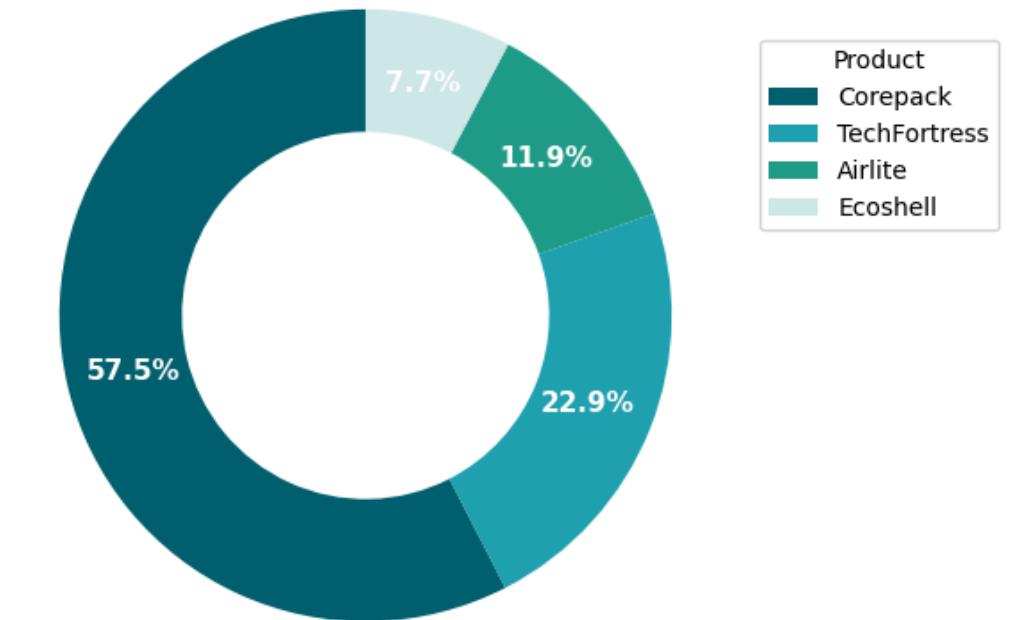
- Average probability** per product was chosen to aggregate to user\_id level
- Captures **consistent interest** across sessions.

Predicted Product Distribution (Buyers Only)



Metric	Value
Accuracy	0,973
F1	0.959
Precision	0.946
Recall	0,973

\*on test set



## Strategy & final verdict

The V-50 brand can now shift from "broad-reach" marketing to "intent-based" targeting. We have successfully transformed raw session data into a predictive engine with 95.8% accuracy.

### Action:

Immediate deployment

## Business insights & targeted growth

The model identified 4,450 sessions that looked exactly like buyers but did not convert.

### Action:

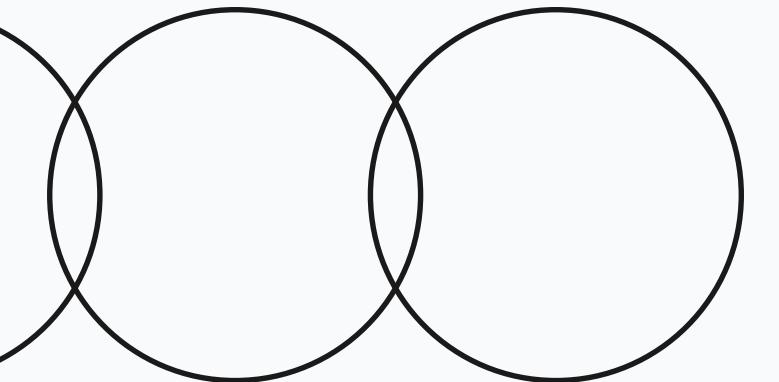
- Automated Recovery: Implement "abandoned intent" email flows for the 14.36% predicted buyer segment.
- Use the pred\_multi\_score to dynamically swap homepage banners based on the specific product (1-4) the user is predicted to want.
- Precision targeting of the top 10% of traffic will yield a higher ROI than any general site-wide promotion.



# Takeaways

# Thank you

We appreciate your attention and welcome inquiries!



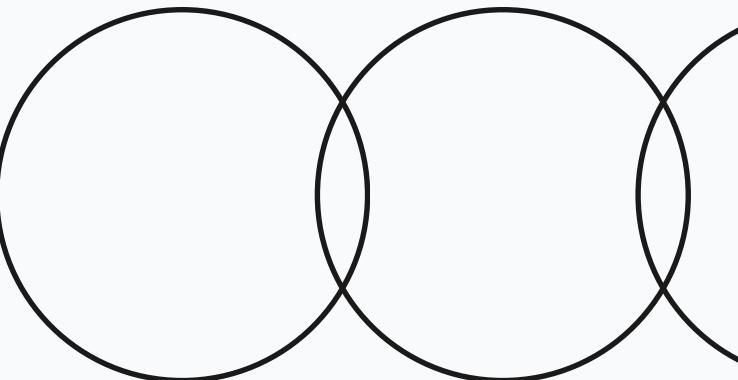
TechFortress™



# appendix

## Resources

Kannan & Li (2017) – “Digital Marketing: A Framework” –  
International Journal of Research in Marketing



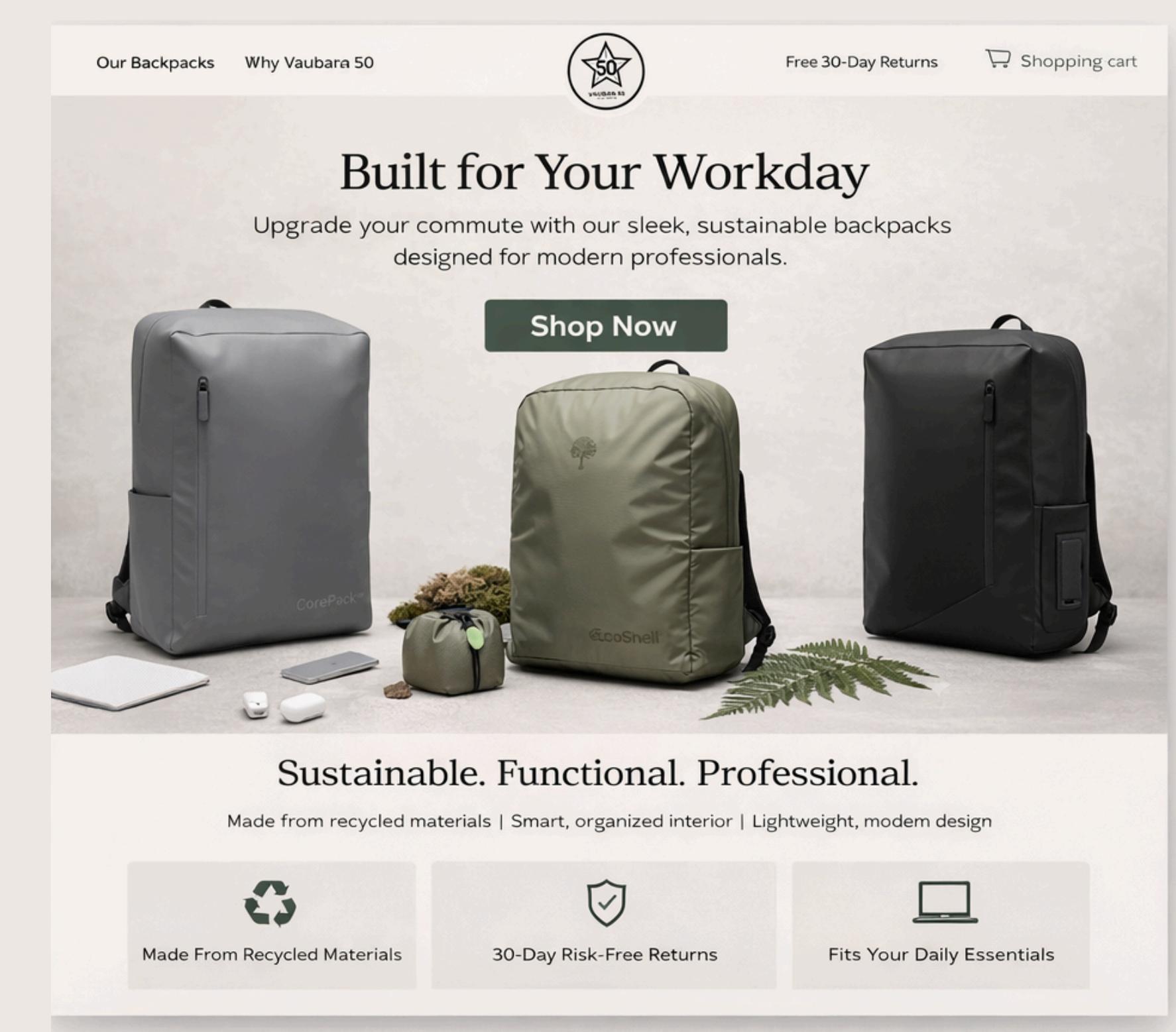
# Smart Work-Hours Trigger: Personalized Professional Lander Concept

The **Smart Work-Hours Trigger** activates when a user enters via **paid search**, browses on desktop, and visits during **working hours** (9:00–17:00).

Instead of showing the standard homepage, the system automatically redirects them to a **personalized professional landing** page tailored to their structured, goal-oriented behavior.

This lander emphasizes **workday functionality**, **clean minimalist design**, **sustainability transparency**, and **risk-reduction messaging** such as Free 30-day returns. The hero message — “*Built for Your Workday*” — positions EcoShell as a reliable, intelligent choice for modern professionals.

By aligning the experience with **user intent**, **device context**, and **time-of-day behavior**, this strategy enhances trust, strengthens **paid search efficiency**, and increases conversion among high-intent daytime users.



The screenshot shows a personalized landing page for a professional backpack. At the top, there's a navigation bar with links for "Our Backpacks", "Why Vaubara 50", a circular badge with a star and the number "50", "Free 30-Day Returns", and a "Shopping cart". The main headline is "Built for Your Workday" with a subtext: "Upgrade your commute with our sleek, sustainable backpacks designed for modern professionals." Below the headline are three backpacks (gray, olive green, and black) displayed on a light surface with some office accessories like a laptop, a small plant, and a notebook. A "Shop Now" button is overlaid on the gray backpack. The bottom section features three callout boxes: "Made From Recycled Materials" with a recycling icon, "30-Day Risk-Free Returns" with a checkmark icon, and "Fits Your Daily Essentials" with a laptop icon.

Our Backpacks Why Vaubara 50

Free 30-Day Returns Shopping cart

50

Built for Your Workday

Upgrade your commute with our sleek, sustainable backpacks designed for modern professionals.

Shop Now

CorePack™

EcoShell

Sustainable. Functional. Professional.

Made from recycled materials | Smart, organized interior | Lightweight, modern design

Made From Recycled Materials

30-Day Risk-Free Returns

Fits Your Daily Essentials