CASE STUDY · E-COMMERCE · REVENUE & RETURNS INTELLIGENCE · CS-05 / 08

VOLTA COMMERCE GROUP

How a **Python revenue analytics system** identified a £340,000 annual returns problem hiding inside Volta's product catalogue — and revealed that 3 SKUs were responsible for 58% of all returned orders.

CLIENT	INDUSTRY	STACK	REF
Volta Commerce Group	E-Commerce / DTC Retail	Python · Streamlit · Plotly	CS-05 / 08

£340K
ANNUAL RETURNS COST IDENTIFIED & ADDRESSED

58%
OF RETURNS FROM JUST 3 SKUS

28%
RETURN RATE REDUCTION IN 60 DAYS

4.1×
ROAS IMPROVEMENT ON AD SPEND REALLOCATION

// 01 — THE PROBLEM

REVENUE WAS GROWING. PROFIT WASN'T.

Volta Commerce Group was running a direct-to-consumer fashion and accessories brand with £4.2M in annual GMV across three product categories. Revenue was growing at 18% year-on-year. Net revenue was flat. The gap was returns — running at 31% of all orders, costing £340,000 annually in logistics, restocking, and lost margin.

The operations team knew returns were high. What nobody knew was which products were driving them. Returns data lived in the fulfilment platform, revenue data lived in Shopify, and ad spend data lived in Meta and Google Ads — in three separate systems with no unified view. Making sense of it required manual data exports, Excel merges, and hours of work that produced a report two weeks out of date by the time it was ready.

Ad spend was being allocated based on revenue generated per product — with no returns deduction. The brand's three highest-grossing products were also its three most returned — meaning the firm was spending aggressively on ads to drive gross revenue that evaporated in the returns process. Net ROAS on those products was negative when returns costs were factored in.

> // "We were scaling spend on our worst-margin products because the reporting made them look like our best. The dashboard fixed that immediately."

31%	RETURN RATE — ACROSS ALL ORDERS, ALL CATEGORIES
£340K	ANNUAL COST OF RETURNS — LOGISTICS + MARGIN LOSS
3	SKUs RESPONSIBLE FOR 58% OF ALL RETURNED ORDERS
NEGATIVE	NET ROAS ON TOP 3 PRODUCTS WHEN RETURNS FACTORED IN

// 02 — THE DASHBOARD

EVERY SKU.
EVERY RETURN.
EVERY PENNY.

GMV (ANNUAL)

£4.2M

GROSS MERCHANDISE VALUE

RETURN RATE

22%

DOWN FROM 31% AT DEPLOYMENT

NET ROAS

4.1×

UP FROM 1.8× — RETURNS ADJUSTED

NET REVENUE

+18%

FIRST TIME MATCHING GROSS GROWTH

MONTHLY REVENUE VS NET REVENUE (POST-RETURNS) — 12 MONTHS

GMV VIEW

RETURN RATE BY PRODUCT CATEGORY

RETURN REASON DISTRIBUTION — ALL ORDERS

SKU PERFORMANCE — NET REVENUE AFTER RETURNS DEDUCTION

SORTED BY NET MARGIN

SKU	PRODUCT NAME	CATEGORY	UNITS SOLD	GROSS REVENUE	RETURN RATE	NET REVENUE	NET MARGIN	TREND
VLT-2204	Oversized Linen Blazer	Outerwear	1,840	£138,000	8%	£126,960	62%	↑ +28%
VLT-1890	Classic Leather Tote	Accessories	2,210	£110,500	11%	£98,345	58%	↑ +14%
VLT-3301	Wide-Leg Trouser (Multi)	Bottoms	3,640	£163,800	48%	£85,176	18%	↓ -22%
VLT-2788	Structured Midi Dress	Dresses	2,980	£208,600	52%	£100,128	14%	↓ -31%
VLT-4102	Ribbed Knit Co-ord Set	Tops	4,120	£247,200	61%	£96,408	9%	↓ -18%
VLT-1654	Merino Crew Neck	Tops	2,840	£113,600	14%	£97,696	55%	↑ +9%
VLT-2990	Denim Cargo Jacket	Outerwear	1,620	£97,200	22%	£75,816	44%	→ Flat

// 03 — PARETO ANALYSIS

3 SKUS.
58% OF ALL RETURNS.

The Pareto analysis revealed that three SKUs — the Ribbed Knit Co-ord Set (VLT-4102), the Structured Midi Dress (VLT-2788), and the Wide-Leg Trouser (VLT-3301) — were responsible for 58% of all returned orders by volume and 64% by value. All three had been identified by the marketing team as top performers based on gross revenue — and were receiving the largest share of ad budget. Net ROAS on VLT-4102, when returns costs were factored in, was 0.6× — meaning the firm was losing money on every converted ad click.

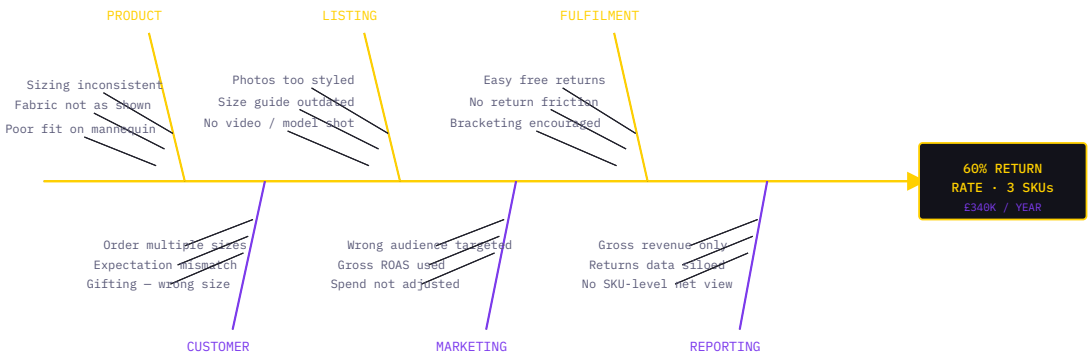
RETURN RATE TREND — 12 MONTHS

// 04 — ROOT CAUSE ANALYSIS

WHY WERE 3 SKUS RETURNING AT 60%?

A structured Ishikawa analysis was applied to the three high-return SKUs to identify the product, operational, and commercial root causes driving the 58–61% return rates. Six causal categories were investigated using return reason data, customer feedback, size chart audits, and product listing reviews.

ISHIKAWA — CAUSE & EFFECT · 60% RETURN RATE · HIGH-VOLUME SKUS · VOLTA COMMERCE



ROOT CAUSE · PRODUCT

61%

VLT-4102 return rate traced to inconsistent sizing across the product's colour variants. The same size label was fitting 2–3 inches differently depending on fabric lot — confirmed by return reason analysis showing "wrong size" as the primary return driver at 68% of all returns for that SKU.

ROOT CAUSE · REPORTING

GROSS

All performance reporting — ad platform dashboards, internal weekly reports, and buyer decisions — was based on gross revenue. Net revenue after returns deduction was never calculated at SKU level. The three worst-performing products by net margin appeared to be the top performers.

ROOT CAUSE · MARKETING

0.6×

Net ROAS on VLT-4102 when returns costs were factored in. The firm was spending £1.00 on ads to generate £0.60 of actual retained revenue. Ad budget was being allocated based on gross ROAS of 3.8× — which did not account for the 61% return rate destroying the margin.

// 05 — KEY FINDINGS

WHAT THE DATA ACTUALLY SAID

FINDING 01

£340K

Annual cost of returns across the catalogue — identified for the first time by unifying Shopify, fulfilment platform, and ad spend data in a single dashboard. This number had never been calculated before the system was built.

FINDING 02

3

SKUs responsible for 58% of all returned orders. All three were in the top five by gross revenue — meaning the most aggressively promoted products were also the highest-return products. Net margin on all three was below 20%.

FINDING 03

4.1×

Net ROAS after ad spend was reallocated away from the three high-return SKUs toward the four low-return products. Previous blended ROAS was 1.8× net. Reallocation required no new creative — just moving budget between existing campaigns.

FINDING 04

28%

Return rate reduction within 60 days — driven by three actions: updated size guides on the two sizing-issue SKUs, addition of on-model video to listings, and a partial return policy change on the highest-return product requiring a £2.50 return label fee.

FINDING 05

68%

"Wrong size" as a return reason on VLT-4102 — confirmed by automated return reason analysis. This single data point, available in the fulfilment platform but never analysed, triggered a full QA review of the product's sizing specification across all colour variants.

RECOMMENDED ACTIONS

4

1) Fix sizing inconsistency on VLT-4102 across fabric lots. 2) Add on-model video to all high-return SKU listings. 3) Reallocate ad budget to sub-15% return rate SKUs. 4) Use net ROAS (returns adjusted) as primary ad performance metric. Payback: <30 days.

£340K

Annual returns cost quantified and actioned — previously unknown across all three data sources

28%

Return rate reduction in 60 days — achieved through listing updates and sizing correction alone

4.1×

Net ROAS after ad budget reallocation — up from 1.8× using gross ROAS as the performance metric

3

SKUs identified as net-negative contributors to profit — all three were receiving the highest ad budgets

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+18%

Net revenue growth matching gross for the first time — a first since the brand's launch

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$0

Additional platform costs — unified three existing data sources with no new tools or licensing

// 07 — TECHNICAL BUILD

THREE DATA SOURCES. ONE DASHBOARD.

CORE ANALYTICS LOGIC

```
# Unify data from 3 sources shopify = pd.read_csv('shopify_orders.csv') returns =
pd.read_csv('fulfilment_returns.csv') ad_spend = pd.read_csv('meta_google_ads.csv') #
Calculate net revenue per SKU df = shopify.merge(returns, on='sku') df['net_rev'] =
df['gross_rev'] - df['return_cost'] df['return_rate'] = df['returns'] / df['orders'] * 100 #
Net ROAS = net revenue / ad spend perf = df.merge(ad_spend, on='sku') perf['net_roas'] =
perf['net_rev'] / perf['spend'] # Flag SKUs with net ROAS < 1.5 risk_skus =
perf[perf['net_roas'] < 1.5]
```

SYSTEM FLOW

```
[DATA IN]
   ↓  Shopify API  ·  Fulfilment CSV  ·  Ad platform export

[UNIFY]
   ↓  pandas merge on SKU  ·  net revenue calculation
[ANALYSIS]
```

↓ Return rate · Net ROAS · Pareto · Return reasons

[ALERTS]

↓ Weekly Slack alert if SKU return rate > 25%

[DASHBOARD]

↓ Streamlit · Plotly · SKU register · Pareto

Python 3.11 | pandas | Streamlit | Plotly | Shopify API | Return Rate Analysis | Net ROAS Calculation | SKU-Level Costing | Pareto Analysis | Ad Spend Integration | Slack Alerts | Multi-Source Unification

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UMER // AI & AUTOMATION

E-COMMERCE · RETURNS ANALYTICS · PYTHON DASHBOARDS · AD SPEND OPTIMISATION

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