



## DATA DRIVEN STRATEGIES

# CASESTUDY

Simulate the future, allocate with certainty

### Background

A London-based challenger insurer ("the Client") underwrites personal-lines and micro-SME cover with £450 million GWP. Its ambition: pivot from broker-heavy distribution to a data-driven, direct-to-consumer platform—bundling usage-based motor, parametric gadget and instant cyber-micro-policies.

Venture Capital investors demanded a clear view of where to deploy scarce capital, which product bets to scale, and how to balance loss-ratio volatility against growth.

### Introduction

Enigma Risk Advisory, advised on the development of an enterprise simulation cockpit that fuses:

- AI/ML demand & severity forecasts (tele-matics, open-banking and IoT feeds).
- Nested-stochastic financial models capturing underwriting cash-flows, reinsurance, and capital charges.
- System-dynamics loops linking pricing moves, customer churn, acquisition spend and brand trust.

### Challenges Faced

Dimension	Pain-Point	Strategic Consequence
Data Blind-Spots	Fragmented policy & telematics data; no unified view of loss drivers	Pricing couldn't differentiate high-value segments
Volatile Loss Ratios	CAT-exposed gadget line swung $\pm 18$ pts YoY	Rating-agency capital strain
Channel Conflict	Direct digital vs. broker commissions	Growth-profit tension, reputational risk
Capital Allocation Fog	Multiple MVPs competing for £30 m tech budget	Risk of betting on the wrong product
Board Literacy	Traditional P&L decks hid feedback-loop dynamics	Decisions driven by narrative, not numbers



## DATA DRIVEN STRATEGIES

# CASESTUDY

Simulate the future, allocate with certainty

### Results and Impact

- Combined ratio outlook -4.1 pts at target mix while sustaining 22% topline CAGR.
- £12 million economic capital freed by optimising reinsurance layers and hedging CAT exposure.
- Planning cycle time ↓ 60%—execs run live what-if sessions in board workshops.
- AI forecast error -35% after model governance layer added drift & bias checks.
- Investors extended £40m Series B on the strength of quantified roadmap.

### Solutions Implemented

#### a. AI-Enhanced Demand & Severity Engine

- Gradient-boosted and transformer models ingest telematics speed, weather, credit and social signals.
- SHAP explainers flag top price drivers; bias metrics surface any fairness breaches.

#### b. Nested-Stochastic Balance-Sheet Simulator

- 50,000 stochastic paths project premiums, claims, reinsurance cash-flows and solvency capital.
- Scenario library spans severe weather, cyber pandemic, and pricing-wars.

#### c. System-Dynamics Strategy Map

- Stock-and-flow loops model rate changes → churn → acquisition spend → loss-ratio dilution.
- Direct vs. broker cannibalisation visualised in real time.

#### d. Capital-Velocity Dashboard

- Heat-map ranks products by risk-adjusted NPV / regulatory capital unit.
- Scenario toggles—Hyper-Growth, Resilience, Cash-Harvest—re-optimize mix instantly.

#### e. Governance & Operating Model

- “Strategy Guild” pairs actuaries, data scientists, finance and marketing in fortnightly sprint reviews.
- Model-risk policy embeds validation, drift alerts and board sign-off checkpoints.

### Conclusion

By marrying AI-rich forecasts, high-speed stochastic simulation and systems-thinking into a single cockpit, the insurer replaced gut-feel debates with data-tight strategic foresight.

Leadership can now pivot pricing, product mix and capital in hours—not quarters—steering confidently toward a fully digital, customer-centric future.