

# ISRO Strategic Launch Analysis & Forecast Report

## 1. Time-Series Payload Forecast (Future 6 Months)

The model forecasts a high payload volume, with an estimated **8,500 kg** in Q1 2026 and **9,200 kg** in Q2 2026, indicating aggressive scheduling.

## 2. Deep Dive: Reusability ROI

Simulating a 30% reuse saving model reveals significant long-term potential.

Metric	Value
Total Disposable Cost (Simulated)	\$10,550.00 M
Total Reusable Cost (Simulated)	\$9,500.00 M
<b>Total Savings</b>	<b>\$1,050.00 M</b>
Percentage Savings	10.00 %
<b>Break-Even Point (Flights)</b>	<b>3.5 Reusable Launches</b>

## 3. Scenario Simulation & Risk Analysis

A high-risk GSLV Mk III mission scenario was run using 10,000 Monte Carlo trials to assess financial exposure.

Metric	Value
Simulated Success Rate	72.00%
<b>Expected Financial Loss (Risk)</b>	<b>\$18.2 M</b>
Net Expected Financial Outcome (ROI)	\$85.0 M

## 4. Benchmarking and Competitiveness

ISRO maintains a cost-competitive position compared to global agencies.

Calculated Success Rate: **57.00%**

Estimated Cost per kg to LEO: **\$9,371 USD** (Highly competitive)

## Recommendation

Accelerate the RLV program, as the break-even point is achievable within an aggressive launch schedule. Implement the advanced Stacking Classifier model (`isro_launch_model_v2.pkl`) into operational launch risk review for a more accurate success probability (72% in the simulated scenario).