# Q-PEP™ Product Economics Protocol

**VERSION:** 1.0 (Public Draft)
**STATUS:** Active / Open for Comment
**MAINTAINER:** Office of the Product Economist (OPE)

**ABSTRACT**

A forensic governance standard for identifying, measuring, and controlling the variable economic risk of AI-enabled product initiatives. This protocol provides the "Kill Criteria" and audit mechanisms required to prevent margin erosion in generative AI portfolios.

# Scope & Jurisdiction

## Governance Objective

To transition AI R&D from "Venture Bets" (OpEx) to "Unit Economic Assets" (COGS). The objective is not to slow innovation, but to enforce solvency.

### Domain of Authority

This standard governs:

- **Inference Economics:** The direct marginal cost of AI transactions.
- **Lifecycle Viability:** The criteria for promoting features from "Lab" to "Scale".
- **Risk Escalation:** The triggers for Board-level intervention.

### Exclusions

- Model Architecture / Technical Selection.
- Data Privacy Compliance (GDPR/SOC2).
- Ethical AI / Bias (unless financially material).

### Intended Audience

- Boards of Directors and Audit Committees.
- Chief Financial Officers and Finance Leaders.
- Product Executives with P&L accountability.

### Compliance States

| Compliant | Conditional | Non-Compliant |
| --- | --- | --- |
| All active AI Features meet UEV thresholds. | Breach detected but within remediation window. | Unresolved Kill Trigger or unreported Volatility Tax. |

# Core Entities

## The "AI Feature" (Unit of Risk)

Defined as any user-facing capability that triggers a non-deterministic, variable-cost inference event. Must be tagged in financial reporting as a distinct line item.

## The "Volatility Tax"

The unpriced variance between estimated inference costs and actual production costs due to token bloat, model drift, or user behavior.

## The "Kill Switch"

A pre-authorized governance mechanism that allows Engineering or Product Leadership to disable an AI feature without Board approval if solvency thresholds are breached.

**Scope Limitation:** Execution is limited to AI Features classified as non-core contractual obligations unless explicitly exempted by board resolution.

**Indemnification:** Execution of a Kill Switch under Q-PEP is considered a compliance action taken in good faith. It is classified as a risk mitigation event, not a performance failure.

# Metrics & Formulas

## Unit Economic Viability (UEV)

Must be > 0 for all features in "General Availability."

```
UEV = (Revenue per Transaction) - (Direct Inference Cost + Vendor Wrapper Cost)
```

**Attribution Note:** Attributable revenue may be direct or proxy-based. Proxy-based attribution must be conservative by design and reviewed quarterly by Finance. Optimistic attribution is prohibited.

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## The Volatility Index (V-Index)

High V-Index requires higher margin buffers.

```
V-Index = (Standard Deviation of Cost) / (Mean Cost per Transaction)
```

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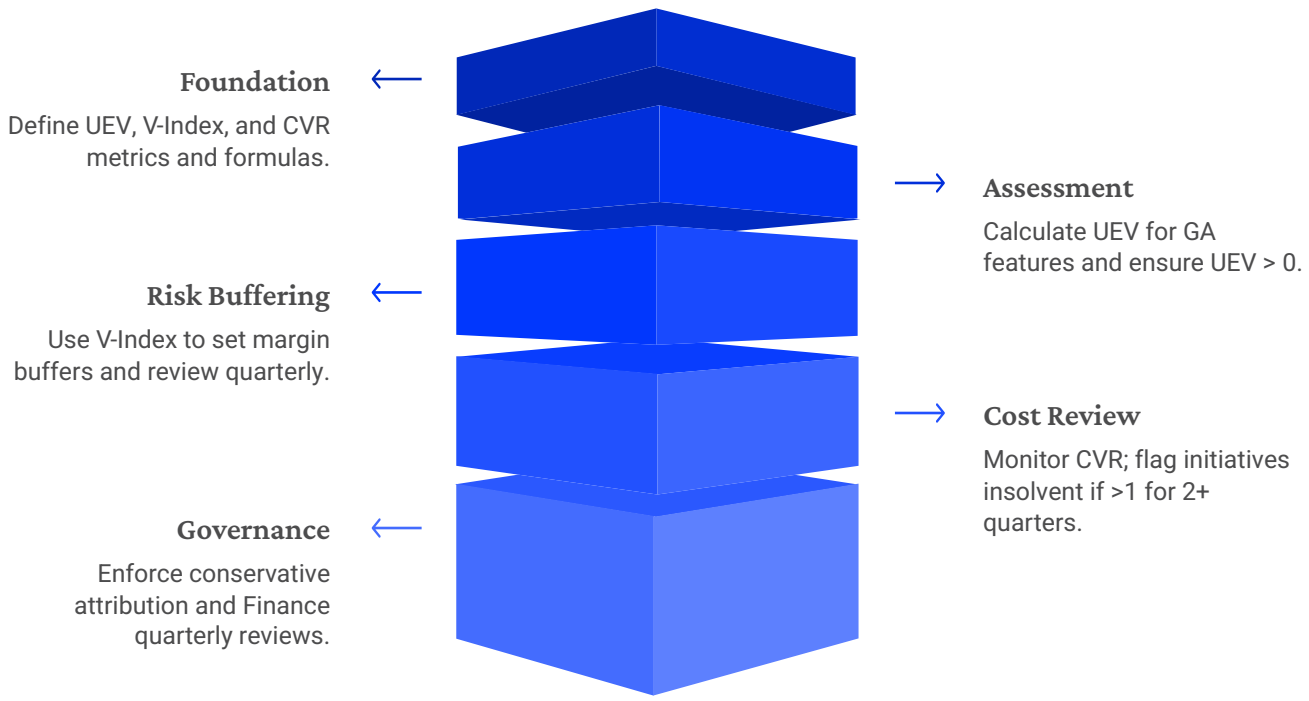
## Cost-to-Value Ratio (CVR)

If CVR > 1.0 for > 2 quarters, the initiative is insolvent.

```
CVR = (Total AI Infrastructure Spend) / (Attributable ARR Uplift)
```



# Governance Thresholds

## (Phase 1) The "Lab" Phase

**Budget:** Capped Fixed Amount.

**Governance:** Weekly Review.

**Exit Criteria:** Proven technical feasibility + Theoretical positive UEV.

## (Phase 2) The "Beta" Phase

**Budget:** Variable, but monitored daily.

**Governance:** Bi-Weekly Review.

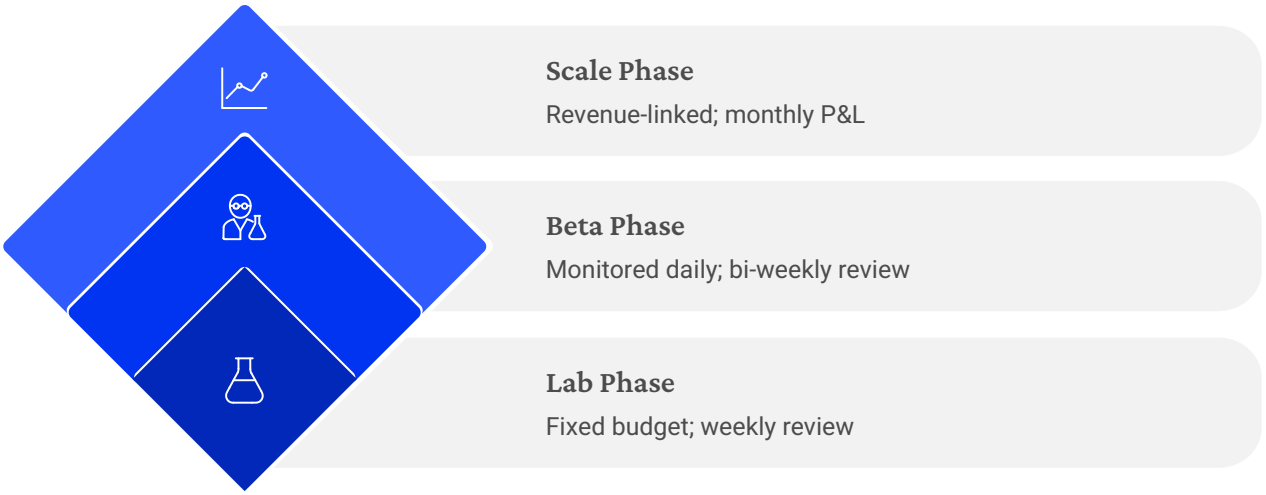
**Kill Trigger:** If UEV is negative for > 4 weeks with no path to optimization.

## (Phase 3) The "Scale" Phase

**Budget:** Uncapped (Revenue Linked).

**Governance:** Monthly P&L Review.

**Kill Trigger:** Margin Erosion > 10% QoQ OR Vendor API price hike > 20% without ability to pass cost to customer.



# The Enforcement Ladder

Protocol for automated risk containment.

**Standard Note:** This logic is normative, not illustrative. Equivalent implementations must preserve semantic intent.

```
# LOGIC BLOCK: SOLVENCY PROTECTION

if (uev < 0) AND (remediation_plan == NULL):
    risk_state = "INSOLVENT"
    action = "FREEZE_SCALE"

# ENFORCEMENT & OVERRIDE LOGIC

if (risk_state == "INSOLVENT"):
    if (manual_override == TRUE):
        log_escalation("Manual Override of Insolvency")
        notify_audit_committee()
    else:
        execute_kill_switch(target_feature)
        notify_board("Risk containment triggered.")
```

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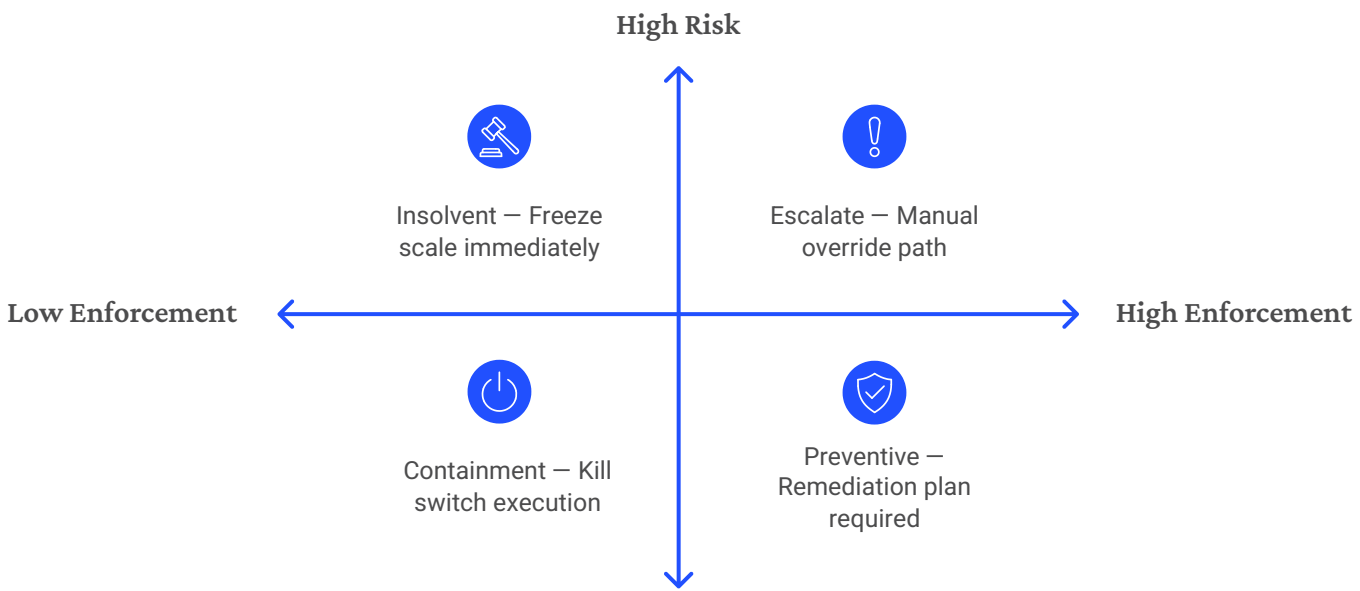
## Authority & License

### Maintainer Authority

The Office of the Product Economist (OPE) acts as the custodial authority for the protocol, analogous to a standards body steward. The OPE may be internal, external, or delegated, but must remain independent of feature delivery incentives to ensure audit integrity.



# Appendices & Artifacts

## License



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## Appendix A: Certification Requirements

| 01 | 02 | 03 |
|---|---|---|
| **Level 1 (Aligned)** | **Level 2 (Certified)** | **Level 3 (Audited)** |
| All AI features tagged; UEV calculated weekly. | Kill Criteria defined; Kill Switch implemented. | Board Resolution adopted; Quarterly Solvency Report filed. |

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## Appendix B: Board Resolution Template

> "RESOLVED, that the Company adopts the Q-PEP™ Product Economics Protocol as its internal standard for AI financial governance..."

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## Governance Q&A & Feedback

### Q: How do we know if an AI feature is destroying margin?

**A:** Refer to the Unit Economic Viability metric. If UEV is negative for >4 weeks, freeze scale.

### Q: Who owns AI economic risk?

**A:** Shared jurisdiction. Product (Revenue), Engineering (Inference), Finance (Audit).

### Q: What is the "AI Volatility Tax"?

**A:** It is the unpriced variance between estimated API costs and actual production bills due to token bloat.

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**Submit RFC Comments / Amendments:**
https://tally.so/r/VLQzEN