

SIGNAL LATTICE

28 cross-disciplinary mental model cards

A practical retrieval system for macro and investing, business strategy, and AI and technology decisions.

PURPOSE

Reduce noise by linking models to mechanisms, evidence, falsifiers and action.

The five-question diagnostic router

Start with the problem. Enter the model library through the mechanism that appears active.

1

HIDDEN DISORDER

What is quietly deteriorating beneath visible stability?

2

TRANSITIONS & FEEDBACK

Could a small event trigger a much larger system change?

3

INFORMATION INTEGRITY

Are metrics, stories or data still representing reality?

4

RESILIENCE & ADAPTATION

Has efficiency removed the ability to survive shocks?

5

RESOURCE & ATTENTION FLOWS

What scarce resource maintains the system's apparent order?

Use protocol and Noise Gate

1	DEFINE	Decision, boundary and horizon
2	ROUTE	Choose one primary family
3	TRIANGULATE	Primary, independent and contrary model
4	FALSIFY	Write disconfirming evidence
5	OBSERVE	Choose leading indicators
6	DECIDE	Act, wait or investigate
7	REVIEW	Judge mechanism, not luck

TEST	0	1	2
Mechanism	Analogy	Plausible	Visible causal path
Evidence	Anecdote	One indicator	Independent indicators
Timescale	Undefined	Approximate	Explicit and fitting
Falsifiability	Explains all	Weak test	Clear falsifier
Actionability	No change	Monitor	Action changes

0-3 ignore operationally | 4-6 watchlist | 7-8 investigate | 9-10 influence action

Entropy Accumulation

Physics

DIAGNOSTIC QUESTION What is quietly becoming harder to maintain?

CORE MECHANISM

Order, trust and coordination decay unless a system continuously invests energy, attention and information in maintenance.

USE WHEN

A system looks functional but exceptions, friction, drift or maintenance demands are rising.

MISUSE WARNING

Do not treat every decline as inevitable entropy; competition, policy or deliberate change may be the dominant cause.

OBSERVABLE INDICATORS

Exception rates; maintenance cost; delayed decisions; incentive conflicts; trust erosion; process workarounds

FALSIFIER

Coherence, reliability and trust improve without additional maintenance effort or resource input.

CROSS-CHECK WITH

Institutional Entropy; Metabolic Cost of Complexity; Signal vs Noise

POSSIBLE ACTIONS

Measure maintenance load; repair feedback channels; simplify interfaces; renew incentives and culture

MACRO / INVESTING	Look for institutional capacity and trust deteriorating beneath acceptable headline data.
BUSINESS STRATEGY	Track rework, approvals, coordination cost and culture drift before earnings weaken.
AI / TECHNOLOGY	Measure data decay, exception handling and human supervision rather than demo performance alone.

Local Stability vs Global Stability

Physics

DIAGNOSTIC QUESTION Where could apparent calm be hiding instability?

CORE MECHANISM

A calm local surface can coexist with instability elsewhere in the system or across a longer timescale.

USE WHEN

Volatility is low, operations appear smooth or a narrow metric looks healthy despite structural concerns.

MISUSE WARNING

Calm is not proof of fragility. Identify the hidden stock or coupling before claiming instability.

OBSERVABLE INDICATORS

Low volatility with rising leverage; concentrated dependencies; suppressed losses; widening internal dispersion

FALSIFIER

Stress tests show that shocks remain contained and buffers strengthen across the whole system.

CROSS-CHECK WITH

Hidden Tail Accumulation; Minsky Stability-Instability; Ecological Diversity

POSSIBLE ACTIONS

Widen the boundary; lengthen the timescale; inspect dependencies; run system-level stress tests

MACRO / INVESTING	Compare calm markets with leverage, fiscal pressure, funding concentration and cross-border dependencies.
BUSINESS STRATEGY	Look beyond stable revenue to customer concentration, key-person risk and supplier dependence.
AI / TECHNOLOGY	Test edge cases, correlated model failures and infrastructure dependencies behind smooth user experience.

Phase Transition

Physics

DIAGNOSTIC QUESTION Which threshold could change the system's regime?

CORE MECHANISM

Accumulated pressure can push a system across a threshold, causing abrupt reorganization disproportionate to the final trigger.

USE WHEN

Relationships are nonlinear, buffers are thin and small disturbances appear capable of changing system behavior.

MISUSE WARNING

The model identifies susceptibility, not the exact trigger or timing of a crash.

OBSERVABLE INDICATORS

Accelerating correlations; thinning liquidity; threshold breaches; nonlinear response; rapid synchronization

FALSIFIER

Repeated shocks produce proportional, contained responses while buffers rebuild.

CROSS-CHECK WITH

Schelling Threshold Cascades; Minsky Stability-Instability; Reflexivity

POSSIBLE ACTIONS

Map thresholds; reduce irreversible exposure; predefine responses; monitor rate of change

MACRO / INVESTING	Identify exchange-rate, funding, political or confidence thresholds rather than predicting dates.
BUSINESS STRATEGY	Watch service failures, churn or cash constraints that can switch the organization into a new regime.
AI / TECHNOLOGY	Monitor adoption, cost and regulation thresholds that can abruptly change platform economics.

Energy Gradient

Physics

DIAGNOSTIC QUESTION What resource gradient is making this order possible?

CORE MECHANISM

Systems organize and grow around gradients in usable energy, capital, information or attention.

USE WHEN

Visible activity depends on a continuous resource flow whose source, cost or quality may be changing.

MISUSE WARNING

Do not reduce all economic behavior to physical energy; institutions, incentives and meaning still matter.

OBSERVABLE INDICATORS

Energy return; marginal funding cost; infrastructure capacity; attention inflow; resource bottlenecks

FALSIFIER

The system sustains output after the presumed resource gradient disappears.

CROSS-CHECK WITH

Dissipative Structures; Cognitive Thermodynamics; Metabolic Cost of Complexity

POSSIBLE ACTIONS

Trace resource sources and sinks; test cost sensitivity; locate bottlenecks; secure alternatives

MACRO / INVESTING	Relate monetary claims to energy, logistics, infrastructure and productive capacity.
BUSINESS STRATEGY	Identify the scarce input that actually constrains growth rather than optimizing abundant inputs.
AI / TECHNOLOGY	Trace compute, electricity, data, capital and skilled attention supporting AI output.

Dissipative Structures

Physics

DIAGNOSTIC QUESTION Where is the disorder being exported?

CORE MECHANISM

A system can maintain internal order by consuming resources and exporting disorder, volatility or cost elsewhere.

USE WHEN

A company, market or policy looks unusually stable and efficient because burdens may have been shifted outside its boundary.

MISUSE WARNING

Externalization is not automatically illegitimate; define the boundary and identify who actually absorbs the cost.

OBSERVABLE INDICATORS

Off-balance-sheet exposure; outsourced volatility; environmental cost; supplier stress; public subsidies

FALSIFIER

Full-system accounting shows benefits remain after external costs and transferred risks are included.

CROSS-CHECK WITH

Energy Gradient; Compression Loss; Legibility vs Reality

POSSIBLE ACTIONS

Expand system boundaries; price externalities; map counterparties; test what returns under stress

MACRO / INVESTING	Ask which sectors, countries or future taxpayers absorb today's apparent stability.
BUSINESS STRATEGY	Inspect whether margins depend on fragile suppliers, unpaid maintenance or transferred employee burden.
AI / TECHNOLOGY	Include energy, data labour, moderation, copyright and downstream verification costs.

Signal vs Noise

Information Theory

DIAGNOSTIC QUESTION What information would genuinely change the decision?

CORE MECHANISM

High information throughput can obscure rather than reveal the small subset of observations that change beliefs or decisions.

USE WHEN

News, dashboards, research or AI outputs are abundant but clarity and decision quality are not improving.

MISUSE WARNING

Do not label inconvenient evidence as noise; define in advance what would change the decision.

OBSERVABLE INDICATORS

Repeated commentary; low decision impact; contradictory alerts; attention cost; unstable interpretations

FALSIFIER

Additional information consistently improves calibrated forecasts and decisions.

CROSS-CHECK WITH

Information Saturation; Compression Loss; Availability Cascades

POSSIBLE ACTIONS

Define decision variables; rank sources; reduce update frequency; track belief-changing evidence

MACRO / INVESTING	Separate structural data from market commentary and trigger events.
BUSINESS STRATEGY	Build a small decision dashboard instead of accumulating operational reports.
AI / TECHNOLOGY	Require citations, uncertainty, novelty detection and a clear statement of what changed.

Redundancy as Resilience

Information Theory

DIAGNOSTIC QUESTION Which failure would propagate because no alternative exists?

CORE MECHANISM

Overlapping capacity and independent pathways preserve function when noise, error or shocks disable one route.

USE WHEN

Efficiency initiatives remove buffers, alternatives, spare capacity or independent checks.

MISUSE WARNING

Redundancy can become waste or bureaucracy if pathways are not genuinely independent and useful.

OBSERVABLE INDICATORS

Single points of failure; buffer size; supplier diversity; funding duration; independent verification

FALSIFIER

The optimized system survives realistic shocks as reliably as the redundant alternative.

CROSS-CHECK WITH

Ecological Diversity; Model Collapse; Local vs Global Stability

POSSIBLE ACTIONS

Add independent pathways; preserve slack; diversify critical inputs; test failover

MACRO / INVESTING	Evaluate reserve buffers, funding sources, supply routes and institutional checks.
BUSINESS STRATEGY	Protect cash, alternate suppliers, succession capacity and decentralized judgment.
AI / TECHNOLOGY	Use model diversity, human escalation, backup data and deterministic checks for critical work.

Compression Loss

Information Theory

DIAGNOSTIC QUESTION What important detail disappeared inside the summary?

CORE MECHANISM

Metrics, prices and models compress complex reality, improving coordination while discarding detail.

USE WHEN

A decision relies heavily on a single aggregate, rating, score, benchmark or narrative.

MISUSE WARNING

Compression is necessary. The goal is to recover decision-relevant detail, not reject all abstraction.

OBSERVABLE INDICATORS

Aggregate-detail divergence; hidden dispersion; metric gaming; unstable mappings; excluded local knowledge

FALSIFIER

The compressed measure remains stable and predictive across segments, regimes and edge cases.

CROSS-CHECK WITH

Legibility vs Reality; Narrative Compression; Signal vs Noise

POSSIBLE ACTIONS

Decompose averages; inspect distributions; recover local context; compare alternate measures

MACRO / INVESTING	Decompress GDP, inflation, yields or ratings into sectors, holders, maturities and distributions.
BUSINESS STRATEGY	Look beneath revenue, NPS and productivity averages to customer and process variation.
AI / TECHNOLOGY	Inspect benchmark composition, failure modes and hidden human work behind one performance score.

Information Saturation

Information Theory

DIAGNOSTIC QUESTION Is additional information improving judgment or consuming it?

CORE MECHANISM

Beyond a point, more information consumes attention, increases imitation and lowers the marginal value of each additional signal.

USE WHEN

Teams consume more reports or content while decisions slow, confidence oscillates or consensus becomes shallow.

MISUSE WARNING

Do not use overload as an excuse to remain uninformed; improve selection and cadence.

OBSERVABLE INDICATORS

Decision delay; repeated alerts; forecast churn; source duplication; declining retention; reactive behaviour

FALSIFIER

More data increases forecast accuracy and reduces decision time without greater cognitive cost.

CROSS-CHECK WITH

Signal vs Noise; Cognitive Thermodynamics; Synthetic Information Explosion

POSSIBLE ACTIONS

Set information budgets; batch updates; remove duplicate sources; privilege slow variables

MACRO / INVESTING	Limit news consumption and track a thesis-specific indicator set.
BUSINESS STRATEGY	Reduce dashboards to decisions, owners and exception signals.
AI / TECHNOLOGY	Constrain generation, deduplicate outputs and optimize for verified insight rather than volume.

Evolutionary Selection

Biology

DIAGNOSTIC QUESTION What environment selected today's winners?

CORE MECHANISM

Strategies and organizations are selected by the current environment; survival does not prove truth or permanent fitness.

USE WHEN

Past winners are treated as universally superior or current survival is confused with soundness.

MISUSE WARNING

Avoid just-so stories. Specify the selection pressure and the relevant population.

OBSERVABLE INDICATORS

Entry and exit; strategy replication; changing selection pressures; survival bias; adaptation speed

FALSIFIER

The strategy performs across materially different environments without modification.

CROSS-CHECK WITH

Adaptive Fitness Landscapes; Ecological Diversity; Reflexivity

POSSIBLE ACTIONS

Identify selection pressures; study failures; preserve variation; run small experiments

MACRO / INVESTING	Ask which policies or business models the current monetary and geopolitical environment rewards.
BUSINESS STRATEGY	Distinguish genuine capability from success produced by a temporarily favourable environment.
AI / TECHNOLOGY	Evaluate whether benchmarks select for useful capability or merely benchmark gaming.

Ecological Diversity as Stability

Biology

DIAGNOSTIC QUESTION Does apparent diversity represent genuinely different failure modes?

CORE MECHANISM

Diversity and modularity reduce the probability that one shock disables every participant or pathway simultaneously.

USE WHEN

The system is converging on identical suppliers, models, funding sources, strategies or beliefs.

MISUSE WARNING

Diversity of labels is not resilience if dependencies and behaviours remain correlated.

OBSERVABLE INDICATORS

Concentration; correlation; modularity; independent suppliers; strategy similarity; common infrastructure

FALSIFIER

Apparently diverse components fail together because they share the same hidden dependency.

CROSS-CHECK WITH

Redundancy as Resilience; Hidden Tail Accumulation; Model Collapse

POSSIBLE ACTIONS

Map common dependencies; diversify mechanisms, not names; compartmentalize failures

MACRO / INVESTING	Measure concentration in ownership, funding, trade routes and dominant strategies.
BUSINESS STRATEGY	Diversify customers, suppliers and decision centres without creating uncontrolled complexity.
AI / TECHNOLOGY	Avoid dependence on one model family, cloud, evaluation metric or data lineage.

Adaptive Fitness Landscapes

Biology

DIAGNOSTIC QUESTION What changed in the environment that changes who is fit?

CORE MECHANISM

Capabilities that are optimal in one environment can become liabilities when technology, incentives or constraints change.

USE WHEN

A previously successful organization or strategy is being extrapolated into a changing regime.

MISUSE WARNING

Do not assume every change destroys incumbents; complementary assets may preserve or improve fitness.

OBSERVABLE INDICATORS

Environmental shift; capability mismatch; adaptation time; switching cost; option value; experimentation rate

FALSIFIER

The old capability continues creating advantage under the new constraints.

CROSS-CHECK WITH

Evolutionary Selection; Metabolic Cost of Complexity; Phase Transition

POSSIBLE ACTIONS

Map changing selection criteria; preserve options; test adjacent capabilities; shorten learning cycles

MACRO / INVESTING	Assess whether the policy, demographic or energy regime has changed the winning strategy.
BUSINESS STRATEGY	Identify which legacy strengths become rigidities and which remain transferable.
AI / TECHNOLOGY	Reassess workflows, skills and moats as model capability and cost curves change.

Metabolic Cost of Complexity

Biology / Civilization

DIAGNOSTIC QUESTION Is the next layer of complexity earning its maintenance cost?

CORE MECHANISM

Every layer of complexity consumes energy and coordination; collapse risk rises when marginal complexity costs exceed adaptive returns.

USE WHEN

Organizations, governments or technology stacks add layers, exceptions and controls faster than benefits.

MISUSE WARNING

Complexity is not inherently bad; compare maintenance cost with the value and resilience it creates.

OBSERVABLE INDICATORS

Coordination cost; management layers; exception count; maintenance spend; marginal return on new controls

FALSIFIER

Added complexity measurably improves adaptability, reliability or output more than it costs.

CROSS-CHECK WITH

Entropy Accumulation; Institutional Entropy; Energy Gradient

POSSIBLE ACTIONS

Remove low-return layers; modularize; measure complexity budget; sunset obsolete controls

MACRO / INVESTING	Compare institutional and fiscal complexity with the productive capacity supporting it.
BUSINESS STRATEGY	Calculate the management and software burden created by each new product, market or process.
AI / TECHNOLOGY	Include orchestration, evaluation, security and maintenance in the total cost of multi-agent systems.

Mimetic Contagion

Psychology

DIAGNOSTIC QUESTION Would people still want this if prestigious others stopped wanting it?

CORE MECHANISM

People imitate not only behaviour but desire, causing prestige, fear and conviction to synchronize socially.

USE WHEN

Demand, investment or strategy appears driven by what respected others want rather than independent utility.

MISUSE WARNING

Popularity does not prove irrationality; imitation can transmit useful information.

OBSERVABLE INDICATORS

Prestige references; crowded positioning; copied language; social proof; rapid narrative convergence

FALSIFIER

Participants retain demand after social signals and visible exemplars disappear.

CROSS-CHECK WITH

Prestige Thermodynamics; Availability Cascades; Reflexivity

POSSIBLE ACTIONS

Identify original evidence; remove social cues; compare private and public beliefs; reduce crowd-dependent exposure

MACRO / INVESTING	Separate fundamental capital flows from prestige-driven international or thematic allocation.
BUSINESS STRATEGY	Test whether customers value the product or merely follow category fashion.
AI / TECHNOLOGY	Distinguish productive adoption from executive imitation and fear of appearing behind.

Availability Cascades

Psychology

DIAGNOSTIC QUESTION Is this important, or merely easy to recall?

CORE MECHANISM

Vivid, recent and repeated claims become cognitively available, causing belief and attention to reinforce their apparent importance.

USE WHEN

Media repetition or dramatic examples dominate perception despite weak base-rate evidence.

MISUSE WARNING

Do not dismiss a vivid event solely because it is vivid; compare it with frequency and exposure.

OBSERVABLE INDICATORS

Coverage volume; search intensity; repeated anecdotes; base-rate neglect; rapidly shifting surveys

FALSIFIER

Beliefs remain proportionate after exposure is normalized and base rates are introduced.

CROSS-CHECK WITH

Signal vs Noise; Mimetic Contagion; Narrative Compression

POSSIBLE ACTIONS

Retrieve base rates; compare silent counterexamples; delay reaction; separate frequency from salience

MACRO / INVESTING	Check whether a dramatic event changes the underlying distribution or only public attention.
BUSINESS STRATEGY	Avoid redesigning strategy around the loudest customer or most recent incident.
AI / TECHNOLOGY	Audit training, retrieval and evaluation for overrepresentation of popular or repeated material.

Dopamine Feedback Markets

Psychology / Neuroscience

DIAGNOSTIC QUESTION Is the feedback loop improving learning or provoking activity?

CORE MECHANISM

Fast rewards, alerts and continuous feedback increase compulsive action, emotional volatility and behavioural synchronization.

USE WHEN

Decision frequency rises because interfaces continuously stimulate users rather than because opportunities improved.

MISUSE WARNING

Fast feedback is valuable for learning when rewards align with long-term outcomes.

OBSERVABLE INDICATORS

Check frequency; turnover; notification response; session length; short-horizon decisions; emotional swings

FALSIFIER

Removing stimulation does not reduce activity or improve decision quality.

CROSS-CHECK WITH

Cognitive Thermodynamics; Information Saturation; Mimetic Contagion

POSSIBLE ACTIONS

Slow the interface; batch alerts; introduce cooling periods; measure outcome quality by horizon

MACRO / INVESTING	Treat real-time market attention as a behavioural variable, not just information access.
BUSINESS STRATEGY	Separate customer engagement that creates value from engagement that creates dependency.
AI / TECHNOLOGY	Design assistants to reduce compulsive prompting and optimize for completed decisions.

Schelling Threshold Cascades

Sociology

DIAGNOSTIC QUESTION Whose action causes the next group to move?

CORE MECHANISM

Individuals act when their personal threshold is crossed; enough local actions can cascade into a system-wide shift.

USE WHEN

Adoption, panic, protest, migration or selling depends on how many others have already acted.

MISUSE WARNING

Do not infer a cascade from a few visible actors without estimating the distribution of thresholds.

OBSERVABLE INDICATORS

Adoption clusters; neighbour effects; threshold distribution; accelerating participation; network centrality

FALSIFIER

Additional adopters fail to increase the probability that connected participants act.

CROSS-CHECK WITH

Phase Transition; Mimetic Contagion; Reflexivity

POSSIBLE ACTIONS

Map threshold groups; monitor network hubs; identify cascade breakers; stage adoption deliberately

MACRO / INVESTING	Study depositor, voter, investor or currency-holder thresholds rather than only averages.
BUSINESS STRATEGY	Sequence reference customers and internal champions to cross adoption thresholds.
AI / TECHNOLOGY	Map employee and customer adoption thresholds; do not assume uniform willingness to change.

Legibility vs Reality

Sociology / Institutions

DIAGNOSTIC QUESTION What became invisible so the system could be measured?

CORE MECHANISM

Institutions simplify complex local reality into standardized categories that are easier to govern but less faithful.

USE WHEN

Policy or management relies on standardized scores, dashboards or classifications imposed from a distance.

MISUSE WARNING

Local knowledge can also be biased or self-serving; legibility is necessary for coordination.

OBSERVABLE INDICATORS

Metric gaming; category mismatch; local exceptions; reporting burden; divergence from frontline experience

FALSIFIER

Standard measures remain predictive and useful across contexts without material excluded cases.

CROSS-CHECK WITH

Compression Loss; Institutional Entropy; Narrative Compression

POSSIBLE ACTIONS

Sample local reality; preserve exception channels; audit metric gaming; combine standard and contextual data

MACRO / INVESTING	Compare official aggregates with regional, sectoral and household-level experience.
BUSINESS STRATEGY	Validate dashboards with frontline observation and customer conversations.
AI / TECHNOLOGY	Do not let benchmark legibility replace real-workflow reliability and user context.

Prestige Thermodynamics

Sociology

DIAGNOSTIC QUESTION How much of the resource flow is caused by prestige itself?

CORE MECHANISM

Status and legitimacy attract capital, talent and attention, creating a reinforcing resource gradient around prestigious actors.

USE WHEN

Flows appear disproportionately concentrated around fashionable sectors, institutions or individuals.

MISUSE WARNING

Prestige can be earned evidence of quality; separate informative reputation from self-reinforcing status.

OBSERVABLE INDICATORS

Valuation premium; talent inflow; citation and media share; elite endorsements; funding concentration

FALSIFIER

Resource flows remain after prestige cues are removed or reputation is corrected for performance.

CROSS-CHECK WITH

Mimetic Contagion; Reflexivity; Energy Gradient

POSSIBLE ACTIONS

Adjust for status effects; inspect neglected alternatives; track resource conversion into results

MACRO / INVESTING	Watch legitimacy and reserve-asset prestige as variables affecting international capital flows.
BUSINESS STRATEGY	Use brand and authority deliberately while testing whether prestige converts into customer value.
AI / TECHNOLOGY	Separate model reputation and leaderboard status from fit for the actual task.

Reflexivity

Economics

DIAGNOSTIC QUESTION How is the belief changing the reality it claims to describe?

CORE MECHANISM

Beliefs and prices alter financing, behaviour and fundamentals, which then feed back into the original beliefs.

USE WHEN

Market values or expectations directly influence collateral, investment, hiring, demand or policy.

MISUSE WARNING

Not every price move changes fundamentals; map the actual transmission channel.

OBSERVABLE INDICATORS

Price-linked lending; equity issuance; wealth effects; investment response; narrative reinforcement

FALSIFIER

Changes in belief or price fail to alter financing conditions, behaviour or underlying cash flows.

CROSS-CHECK WITH

Minsky Stability-Instability; Phase Transition; Prestige Thermodynamics

POSSIBLE ACTIONS

Map feedback direction; identify self-reinforcing and self-correcting loops; monitor financing dependence

MACRO / INVESTING	Trace how yields, currencies and asset prices change policy, balance sheets and subsequent flows.
BUSINESS STRATEGY	See how perceived momentum affects recruitment, partners, customer confidence and capital access.
AI / TECHNOLOGY	Track whether AI valuations finance capacity that validates or undermines the original demand narrative.

Minsky Stability-Instability

Economics

DIAGNOSTIC QUESTION What risk-taking did the period of stability encourage?

CORE MECHANISM

Long periods of calm encourage leverage and weaker discipline, gradually making the system unstable.

USE WHEN

Risk-taking, maturity mismatch or refinancing dependence rises during apparently safe conditions.

MISUSE WARNING

High leverage alone does not time a crisis; examine cash flow, maturity, holders and policy capacity.

OBSERVABLE INDICATORS

Credit growth; covenant weakening; speculative borrowing; refinancing share; declining risk premium

FALSIFIER

Leverage falls, maturities extend and debt service improves while stability continues.

CROSS-CHECK WITH

Hidden Tail Accumulation; Reflexivity; Local vs Global Stability

POSSIBLE ACTIONS

Reduce maturity mismatch; strengthen liquidity; stress refinancing; cap exposure before the trigger

MACRO / INVESTING	Study who must refinance, when, at what rate and with which marginal buyer.
BUSINESS STRATEGY	Examine whether stable revenue is encouraging fixed-cost and debt commitments that reduce flexibility.
AI / TECHNOLOGY	Assess whether cheap capital and growth narratives are weakening compute investment discipline.

Hidden Tail Accumulation

Economics / Risk

DIAGNOSTIC QUESTION Which loss is absent from normal data but capable of causing ruin?

CORE MECHANISM

Rare-loss exposure can accumulate unnoticed while ordinary observations remain calm and models underestimate correlation or liquidity shifts.

USE WHEN

Returns are smooth, losses are deferred or risk is transferred into opaque contingent obligations.

MISUSE WARNING

Invoking unknown tails without specifying exposure produces unfalsifiable fear.

OBSERVABLE INDICATORS

Short-volatility payoff; liquidity mismatch; correlated collateral; contingent liabilities; crowded hedges

FALSIFIER

Severe but plausible stress tests reveal bounded losses and functioning liquidity under changed correlations.

CROSS-CHECK WITH

Local vs Global Stability; Minsky Stability-Instability; Ecological Diversity

POSSIBLE ACTIONS

Map nonlinear payoffs; stress joint failures; limit ruin exposure; hold usable liquidity

MACRO / INVESTING	Look for contingent guarantees, duration mismatch and correlated sovereign-financial exposure.
BUSINESS STRATEGY	Identify commitments whose cost appears only under simultaneous customer, supplier or funding stress.
AI / TECHNOLOGY	Examine correlated errors, security exposure and dependence on a few providers or data sources.

Civilizations as Information Systems

Civilization / History

DIAGNOSTIC QUESTION Can the system still transmit what it must remember?

CORE MECHANISM

Large societies depend on transmitting memory, trust, rules and knowledge with sufficient fidelity across people and generations.

USE WHEN

Institutional trust, shared memory or knowledge transmission appears to be weakening.

MISUSE WARNING

Civilizations are not only information systems; material capacity, coercion, geography and energy also matter.

OBSERVABLE INDICATORS

Trust; record quality; educational transmission; institutional continuity; rule consistency; shared facts

FALSIFIER

Coordination and institutional performance remain strong despite declining informational fidelity.

CROSS-CHECK WITH

Institutional Entropy; Narrative Compression; Energy Gradient

POSSIBLE ACTIONS

Preserve records; strengthen verification; decentralize memory; maintain trusted transmission channels

MACRO / INVESTING	Treat credibility, statistics and institutional memory as productive infrastructure.
BUSINESS STRATEGY	Build institutional memory so decisions and customer knowledge survive employee turnover.
AI / TECHNOLOGY	Use AI to retrieve verified organizational knowledge without allowing synthetic content to overwrite provenance.

Institutional Entropy

Civilization / Organizations

DIAGNOSTIC QUESTION Where has symbolic compliance replaced useful function?

CORE MECHANISM

Institutions drift toward bureaucracy, ritual and incentive protection, allowing symbolic compliance to replace function.

USE WHEN

Processes multiply while outcomes weaken and participants optimize for internal rules rather than purpose.

MISUSE WARNING

Formal process is not automatically bureaucracy; some standardization preserves quality and memory.

OBSERVABLE INDICATORS

Approval layers; meeting load; rule exceptions; internal lobbying; output-input divergence; truth filtering

FALSIFIER

Additional process produces measurable reliability, learning or accountability greater than its cost.

CROSS-CHECK WITH

Entropy Accumulation; Legibility vs Reality; Metabolic Cost of Complexity

POSSIBLE ACTIONS

Reconnect process to outcome; simplify approvals; protect truth channels; redesign incentives

MACRO / INVESTING	Track state capacity and implementation quality rather than policy announcements alone.
BUSINESS STRATEGY	Measure decision latency, internal coordination and customer-facing output per layer.
AI / TECHNOLOGY	Prevent AI governance from becoming documentation theatre disconnected from actual model risk.

Narrative Compression

Civilization / Rhetoric

DIAGNOSTIC QUESTION What did this compelling story remove from reality?

CORE MECHANISM

Narratives compress complexity into memorable causal stories that coordinate action but discard ambiguity and contrary evidence.

USE WHEN

One emotionally portable story explains a multidimensional system and organizes group identity.

MISUSE WARNING

Narratives are necessary for coordination; the danger is forgetting what the story excluded.

OBSERVABLE INDICATORS

Monocausal language; repeated slogans; omitted counterexamples; identity attachment; narrative-data divergence

FALSIFIER

The narrative predicts outcomes across cases and adapts transparently to contradictory evidence.

CROSS-CHECK WITH

Compression Loss; Availability Cascades; Legibility vs Reality

POSSIBLE ACTIONS

List excluded variables; build a rival narrative; decompose causal claims; retain ambiguity where material

MACRO / INVESTING	Challenge stories such as inevitable collapse, permanent exceptionalism or one-cause inflation.
BUSINESS STRATEGY	Test whether positioning simplifies customer value without distorting delivery reality.
AI / TECHNOLOGY	Ask models for omitted assumptions, counterexamples and alternative causal structures.

Synthetic Information Explosion

AI & Future

DIAGNOSTIC QUESTION What becomes scarce when content becomes nearly free?

CORE MECHANISM

When the marginal cost of producing plausible information collapses, verification and judgment become scarcer than content.

USE WHEN

AI greatly increases documents, analysis, media or code without proportional gains in trusted decisions or outcomes.

MISUSE WARNING

Synthetic does not mean false or worthless; evaluate provenance, verification and usefulness.

OBSERVABLE INDICATORS

Content volume; duplication; verification time; provenance loss; error propagation; decision conversion rate

FALSIFIER

Higher synthetic output consistently produces verified productivity and better decisions at lower total cost.

CROSS-CHECK WITH

Information Saturation; Signal vs Noise; Cognitive Thermodynamics

POSSIBLE ACTIONS

Price verification; preserve provenance; deduplicate; measure outcome conversion; constrain generation

MACRO / INVESTING	Treat information abundance as a possible source of epistemic volatility and policy confusion.
BUSINESS STRATEGY	Measure decisions, sales, cycle time or quality created per unit of generated content.
AI / TECHNOLOGY	Shift architecture from generation-first to retrieval, verification, judgment and controlled action.

Cognitive Thermodynamics

AI & Future

DIAGNOSTIC QUESTION Is the system returning attention or consuming more of it?

CORE MECHANISM

Attention is finite cognitive energy; every alert, choice and context switch consumes capacity that cannot serve another decision.

USE WHEN

Information systems increase activity but leaders have less time for high-quality judgment.

MISUSE WARNING

Not all cognitive effort is waste; deliberate difficulty can build skill and reveal understanding.

OBSERVABLE INDICATORS

Context switching; decision fatigue; interruption rate; deep-work time; unresolved choices; attention residue

FALSIFIER

More prompts and alerts increase decision quality without raising fatigue or cycle time.

CROSS-CHECK WITH

Information Saturation; Dopamine Feedback Markets; Signal vs Noise

POSSIBLE ACTIONS

Budget attention; automate low-judgment work; batch reviews; design exception-based interfaces

MACRO / INVESTING	Limit the number of live theses and distinguish monitoring from reacting.
BUSINESS STRATEGY	Route routine approvals away from founders while escalating judgment-intensive exceptions.
AI / TECHNOLOGY	Evaluate AI by attention returned to humans, not only tasks or tokens produced.

Model Collapse Through Overoptimization

AI & Future

DIAGNOSTIC QUESTION Is optimization destroying the variation the system needs to learn?

CORE MECHANISM

Optimization around narrow objectives or recursively generated inputs reduces variation and allows errors to reinforce across generations.

USE WHEN

Models, strategies or institutions repeatedly train on their own outputs or one dominant metric.

MISUSE WARNING

Recursive improvement is not automatically collapse; fresh data, diversity and external evaluation can stabilize it.

OBSERVABLE INDICATORS

Output homogenization; benchmark gaming; provenance loops; declining diversity; correlated errors; edge-case decay

FALSIFIER

Independent evaluation shows sustained diversity and real-world performance across successive iterations.

CROSS-CHECK WITH

Ecological Diversity; Redundancy as Resilience; Compression Loss

POSSIBLE ACTIONS

Preserve fresh inputs; diversify models and objectives; use external evaluation; protect edge-case data

MACRO / INVESTING	Watch policy and investment systems that recursively validate themselves through their own metrics.
BUSINESS STRATEGY	Prevent KPI optimization from destroying unmeasured customer or organizational value.
AI / TECHNOLOGY	Maintain human-created data, provenance, model diversity and out-of-distribution tests.

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Source: supplied analytical summary of The Entropy Trap, especially pages 57-74.
Operational categories, wording and decision protocol are an original synthesis.