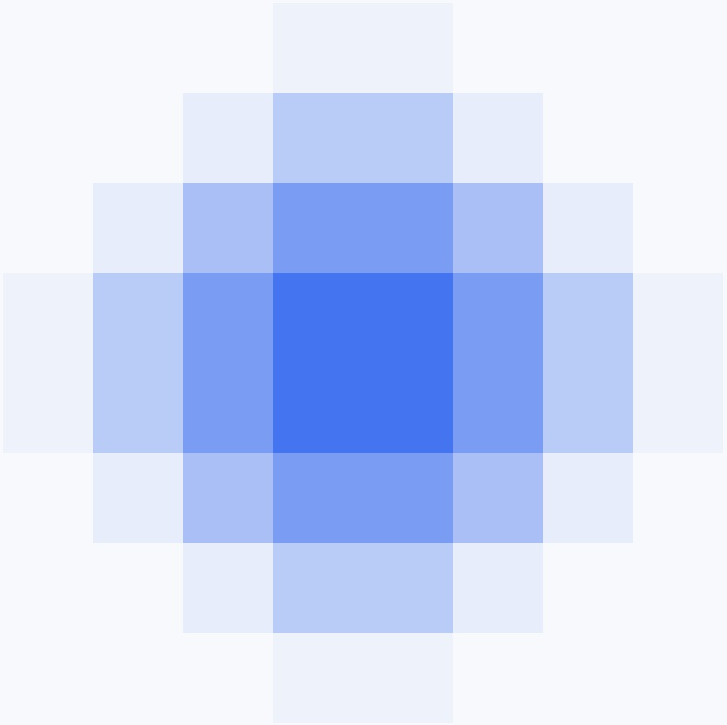


POINT OF VIEW · ENTERPRISE OPTIMIZATION

Enterprise *Optimization.*

Moving beyond silo planning and the manual reconciliation S&OP processes most enterprises still call *integrated.*

Optimization or *negotiation. Pick one.*

SCENE 01 · 09:02 TUESDAY

Five functions, five mandates, one constrained quarter.

Procurement has just signed a 12-month bearing contract to lock unit cost. Finance is escalating working capital. Sales has launched a promotion to defend the quarterly revenue line. Manufacturing is running utilization hot to absorb overhead. Logistics is approving its third air-freight expedite this month.

Every function can still explain why its own decision was rational. The meeting is not negotiating tradeoffs — it is reconciling decisions that were never optimized together in the first place.

THE PATTERN

Most enterprises do not fail because they lack data, systems, or process. They fail because the organization is continuously negotiating with itself.

IN THE ROOM

PROCUREMENT
Unit cost is down 6.2%. Hit the target.

FINANCE
Working capital exposure exceeds covenant headroom by $34M.

SALES
Promo launched Monday. We need fill rate before end of week.

SUPPLY
Constrained on FPGA. Wk-6 fulfillment is 78% against forecast.

LOGISTICS
Third air-freight authorization this month. Spot rates up 22%.

— THE PLAN IS WHATEVER SURVIVES THE NEXT 45 MINUTES.

THESIS

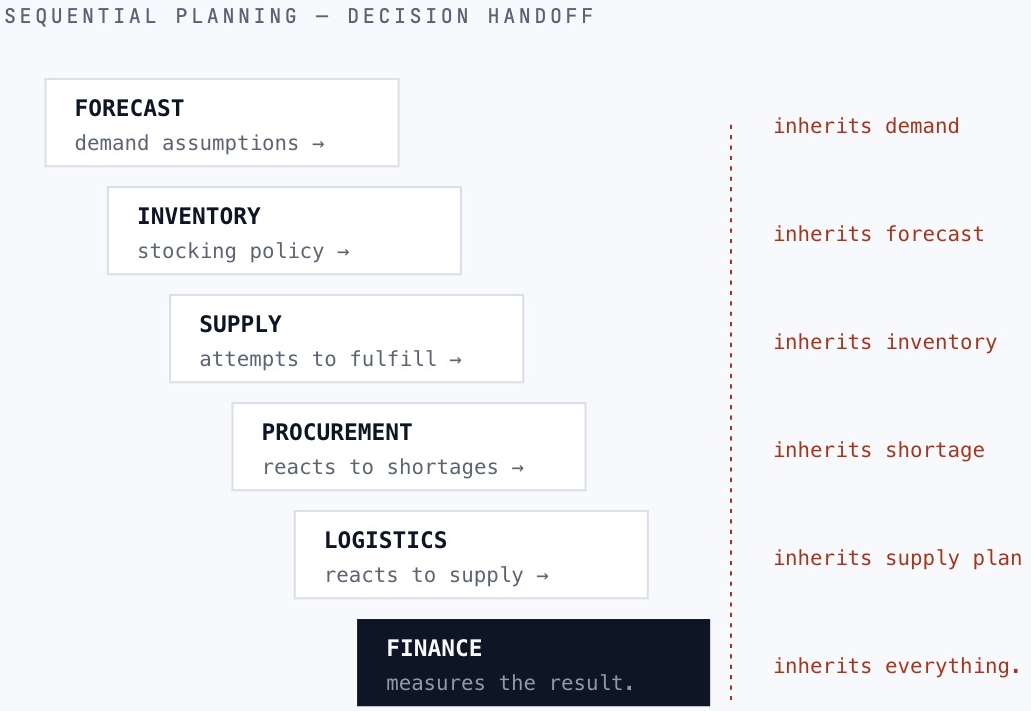
Integrated workflows are *not* integrated decisions.

Two decades of investment have connected the planning stack. Forecasting feeds ERP. Supply planning integrates with transportation. Finance receives operational signals. Dashboards refresh in minutes. Data latency has collapsed.

And yet most planning decisions are still made sequentially.

Demand planning produces a forecast. Inventory planning sets stocking assumptions. Supply planning attempts to fulfill the resulting signal. Procurement reacts to shortages. Transportation reacts to supply. Finance measures consequences afterward.

Each layer inherits assumptions made upstream — without participating in the tradeoff that produced them.



STRUCTURE

Seven ways sequential planning leaks enterprise value.

The failure is not lack of intelligence. It is structural fragmentation embedded into the planning architecture itself.

01

Sequential optimization

Each layer inherits assumptions it did not choose.

02

Pricing disconnected from supply

Discounting accelerates demand into already-constrained supply.

03

Procurement disconnected from working capital

Unit-cost leverage trades against cash the CFO is defending.

04

Inventory disconnected from enterprise economics

Static safety stock ignores the network it sits inside.

05

Transportation as execution detail

Mode and routing inherit decisions made upstream.

06

Allocation blind to strategic value

Proportional fairness ignores which customers matter most.

07

Finance measured, not optimized

Margin, cash, ROIC become consequences instead of variables.

CONSEQUENCE

Value leaks across every seam in the planning stack.

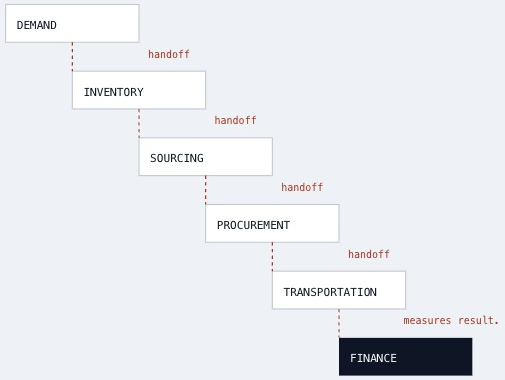
The contradictions are absorbed by the enterprise — and reconciled in meetings.

ARCHITECTURE

The enterprise does not operate sequentially. *Why does the planning system?*

SEQUENTIAL — TODAY

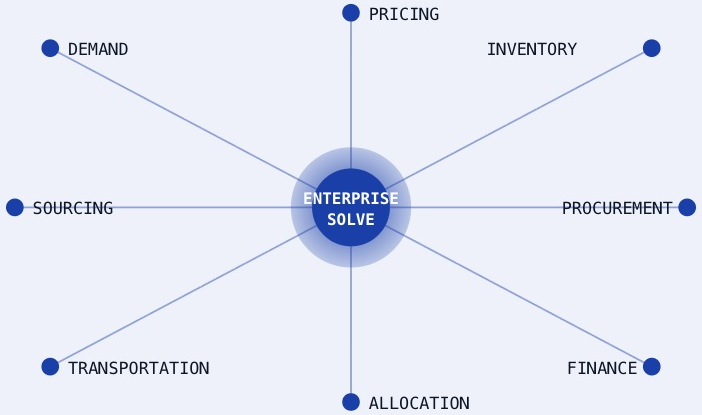
Linear handoff. Conflict resolved in meetings.



LATENCY ACCUMULATES · LOCAL OPTIMA COLLIDE · MEETINGS RECONCILE

SINGLE-PASS SOLVE — FUTURE

Simultaneous variables. One enterprise solve.



SIMULTANEOUS VARIABLES · ONE OBJECTIVE · ONE SOLVE

SCENARIO 01

When pricing becomes a *decision variable.*

A bearings manufacturer enters Q4 with constrained FPGA supply. Demand exists across direct enterprise customers (52% margin, strict Tier-A OTIF), distributors (35% margin), and e-commerce (28% margin, volatile).

Sequential planning forecasts demand first, discovers the shortage later, escalates allocation into a meeting. By the time the meeting resolves, inventory is already committed.

Single-pass solve runs the situation as one optimization. Pricing posture, channel allocation, and air-freight expedite are evaluated together — against $14M of strategic revenue exposure and a $400K logistics decision.

THE REFRAME

The answer falls out of the optimization. Not out of the meeting.

FRAME 01 · SEQUENTIAL — DAYS 0 → 23

▲ revenue exposure: $14.0M ● price posture: unchanged ● expedite: late, $640K

FRAME 02 · SINGLE-PASS — CYCLE 01

SOLVE

- Tier-A allocated 100% · $14M protected
- Distributor channel deferred 3 weeks
- Air freight authorized · $400K

▲ revenue protected: $14.0M ● price posture: +3.4% lower-tier ● expedite: planned, $400K

Δ NET ENTERPRISE OUTCOME: $13.0M PRESERVED · $240K LOGISTICS COST AVOIDED

SCENARIO 02

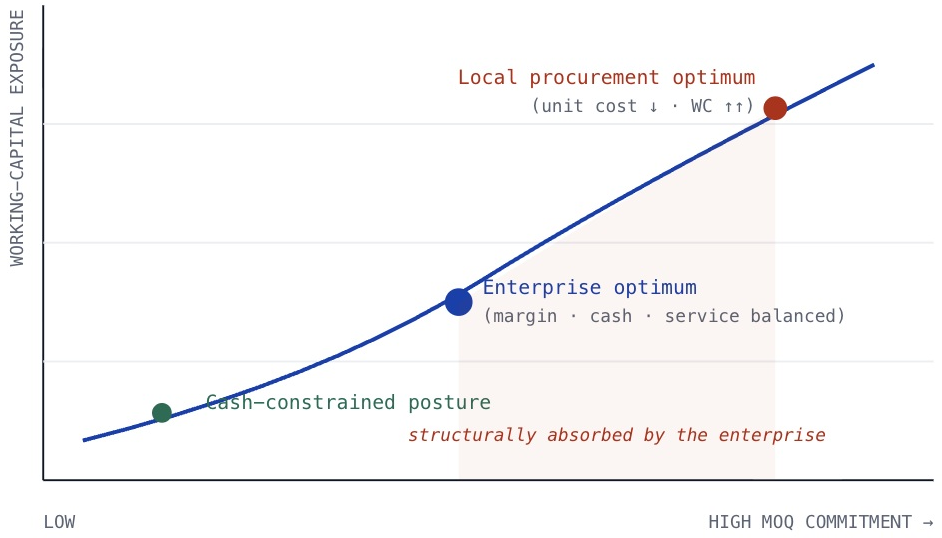
When procurement stops being *execution.*

Procurement is often measured on metrics that conflict with enterprise value. Unit-cost reduction targets encourage larger commitments, extended contracts and aggressive MOQ strategies that look rational inside sourcing models. The same decisions amplify inventory exposure, reduce network agility and consume the working capital finance is simultaneously trying to preserve.

Both sides optimize correctly within their own incentives. The enterprise absorbs the contradiction.

Enterprise optimization places MOQ leverage, forward-buy posture and spot-versus-contract choice inside one coordinated economic system — evaluated against cash flow, supply continuity and future uncertainty in the same solve.

EFFICIENT FRONTIER · MOQ DISCOUNT ↔ WORKING-CAPITAL EXPOSURE



STEPLADDER VOLUME
Discount tier evaluated against marginal WC consumed.

FORWARD-BUY HEDGE
Tariff window weighted against carrying cost and obsolescence.

SPOT VS CONTRACT
One decision against service risk, margin, inventory posture.

SCENARIO 03

Strategic demand is *not* equal demand.

Most allocation systems are built around fairness. When supply is constrained, proportional rules distribute shortages across customers, channels, or regions because demand arrives as fixed independent requests.

Constrained allocation is not a transactional problem. It is a strategic economic problem. A Tier-A direct relationship can shape years of future revenue. A distributor preserves working capital velocity. An e-commerce SKU runs on the thinnest margin in the portfolio.

Single-pass solve evaluates each unit of constrained supply against enterprise value — and may deliberately deprioritize the lower-margin channel to protect a strategic OTIF contract.

1,000 UNITS · CONSTRAINED INVENTORY · THREE CHANNELS

Δ NET ENTERPRISE OUTCOME: +$150K MARGIN · STRATEGIC CONTRACT PRESERVED

SCENARIO 04

Inventory is *posture,* not parameter.

Most organizations calculate safety stock independently using statistical formulas, then hand the targets to supply planning as fixed constraints. Buffers accumulate unevenly. Some nodes are over-protected; others are structurally exposed.

Safety stock competes directly with working capital, lead-time risk, transportation cost and customer-tier service. Sequential systems optimize these separately; planners reconcile them manually.

Single-pass solve treats inventory protection dynamically inside the enterprise optimization. The system identifies where buffers genuinely improve resilience and where they trap unnecessary capital. Safety stock stops being a parameter set in isolation; it becomes a decision the solve makes against the policy's risk appetite, working-capital ceiling and customer-tier service value.

MULTI-ECHELON · SEQUENTIAL ↔ SINGLE-PASS

WORKING-CAPITAL ↓ 11–18% TIER-A SERVICE ↑ 4.2PP UNDER-PROTECTION NODES ↓ 73%

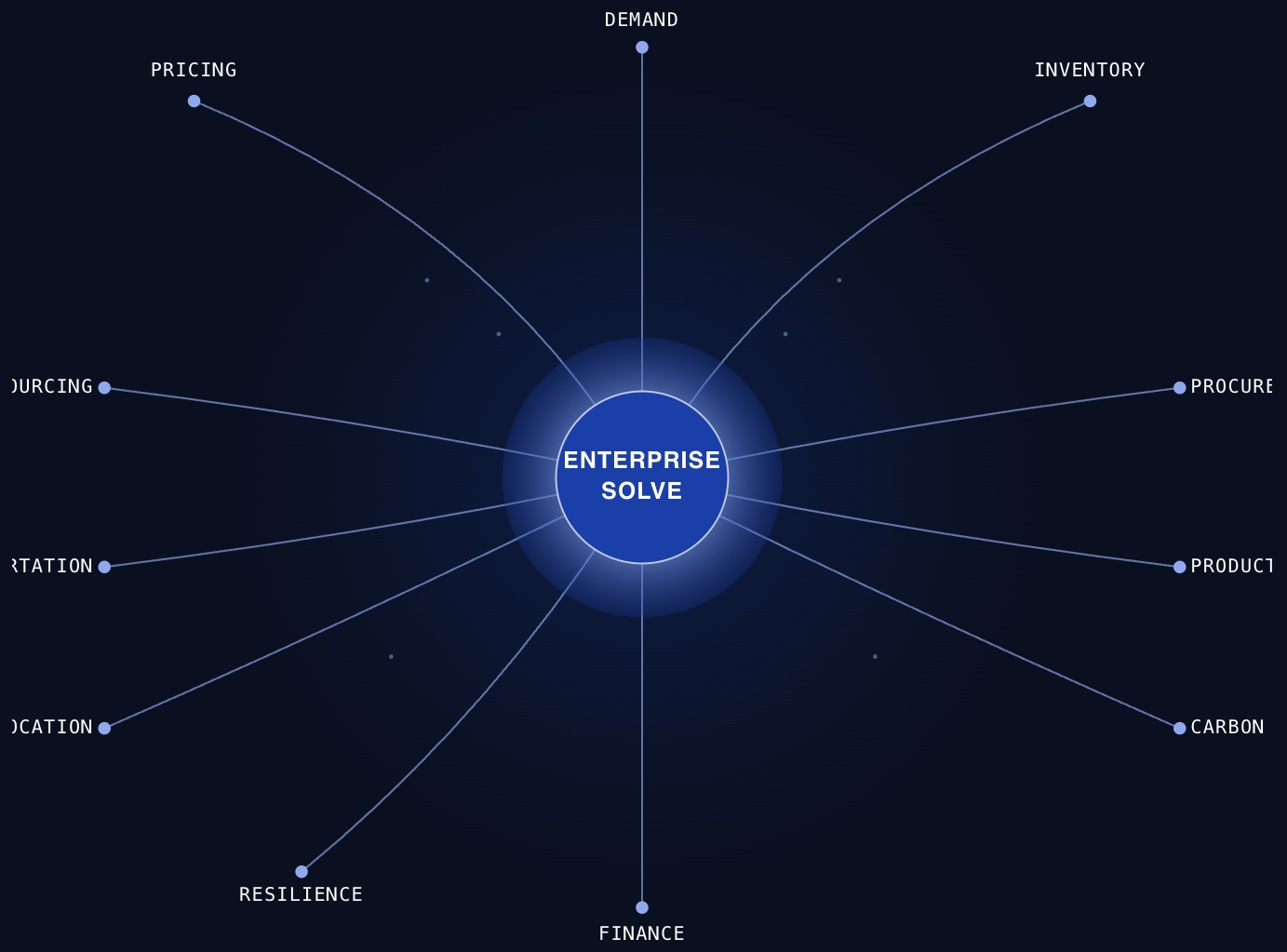
CENTERPIECE

One enterprise. *One solve.*

Pricing, inventory, sourcing, procurement, transportation, allocation, manufacturing, replenishment, customer prioritization and financial objectives no longer behave as isolated planning layers connected through sequential handoffs.

They become simultaneous variables inside one enterprise optimization framework.

> THE SHIFT
>
> *The enterprise stops asking what each function is optimizing. It begins asking what outcome the enterprise is optimizing.*



OBJECTIVE STRUCTURE

The enterprise has *no* single objective.

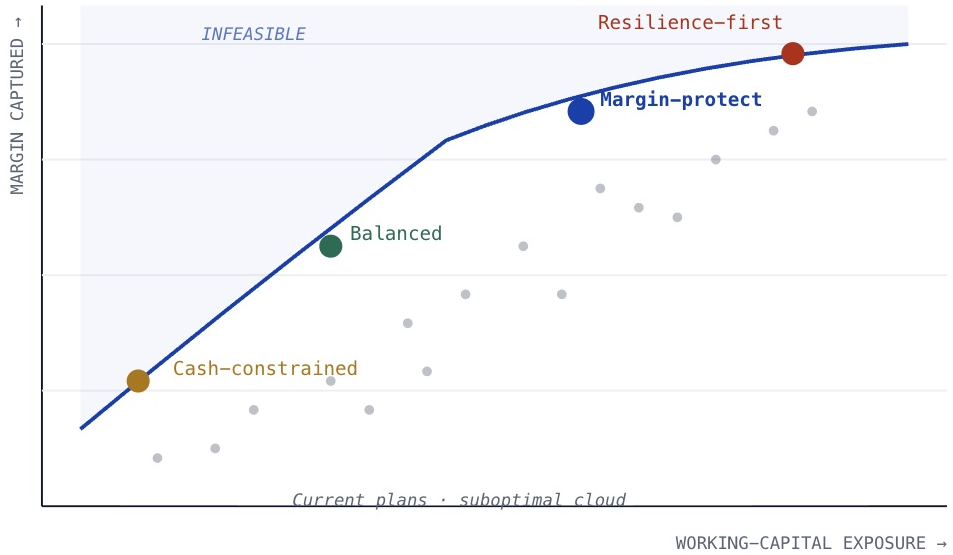
Real enterprises do not operate against a single dominant metric. Service competes with working capital. Margin competes with resilience. Carbon competes with transportation speed. Most executives understand these tradeoffs intuitively. The challenge is representing them coherently inside the decision architecture itself.

VYAN scalarizes every concern into a common monetary basis — Resilient EVA — using dollarized coefficients. Service shortfall is not a weight; it is dollars per percentage point of OTIF below target. Plan churn is dollars per unit of week-to-week order-qty change. Carbon is dollars per ton CO_2e.

Every preference enters as a number a CFO can argue about.

> RESILIENT EVA
>
> *Weights sum to one. Dollars don't have to.*

EFFICIENT FRONTIER · MARGIN ↔ WORKING CAPITAL · POSTURE POINTS



SERVICE / PP	PLAN CHURN	CARBON	TIER-A SHORTFALL
$ per OTIF pp	$ per Δ qty wk-wk	$ per t CO_2e	$ per missed order

POSTURE

The same enterprise behaves differently *under different economic intent.*

Policy stops being a planning parameter set. It becomes the expression of enterprise economic intent. Executives stop reconciling operational contradictions; they govern the posture the system is optimizing toward.

WEIGHT EMPHASIS PER POSTURE →

m margin **i** inventory **s** service **t** transport **a** allocation **c** cash

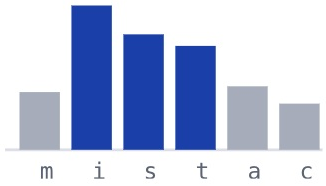
POSTURE 01

Margin Protect

Defend margin first. Discount disciplined. Allocation favors Tier-A.

POSTURE 02

Resilience First



Buffer deliberately. Supplier redundancy honored. Transport flexibility preserved.

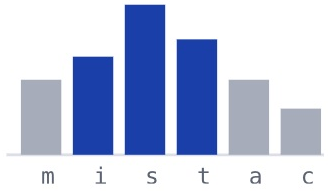
POSTURE 03

Cash Constrained

Tighten inventory. Defer procurement commitments. Preserve working capital.

POSTURE 04

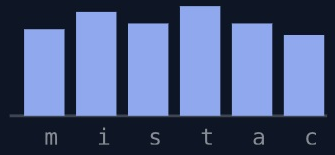
Growth Aggressive



Absorb operational volatility for market expansion. Service openness over efficiency.

POSTURE 05

Balanced Enterprise



Default posture. Margin / service / cash / resilience held in coordinated tension.

RHYTHM

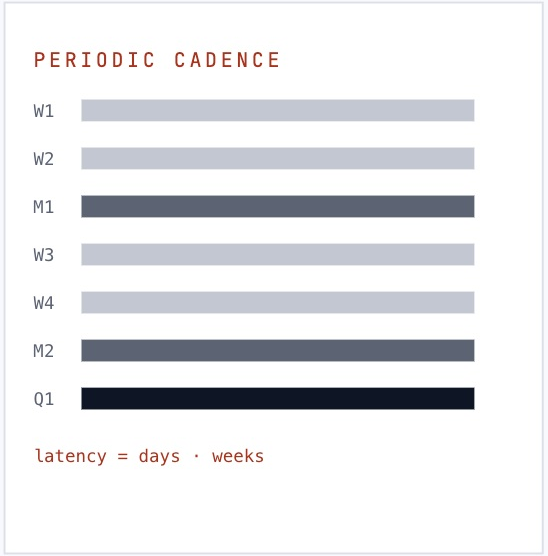
Modern supply chains *no longer behave periodically.*

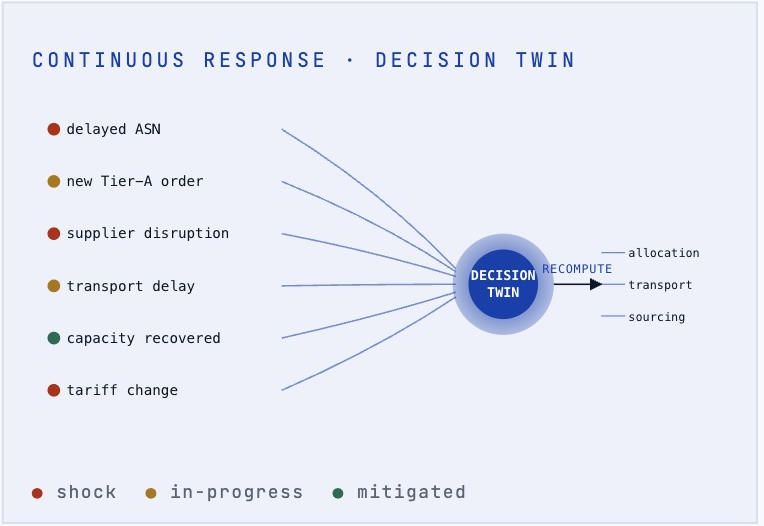
Most planning systems still assume the enterprise operates through periodic cycles. Weekly planning runs. Monthly S&OP reviews. Quarterly business alignment. Scheduled replanning windows.

Demand shocks emerge continuously. Supplier delays propagate instantly. Transportation disruptions cascade in hours rather than weeks.

A delayed ASN is no longer a logistics notification. It becomes a simultaneous reassessment of customer allocation, transportation posture, sourcing alternatives, manufacturing sequencing and revenue exposure.

The planning system stops behaving like a periodic engine and starts behaving like an operational decision system — governing enterprise tradeoffs in real time.





OPERATIONAL CONSEQUENCE

Events stop being notifications. They become triggers for coordinated enterprise reevaluation.

ARCHITECTURE

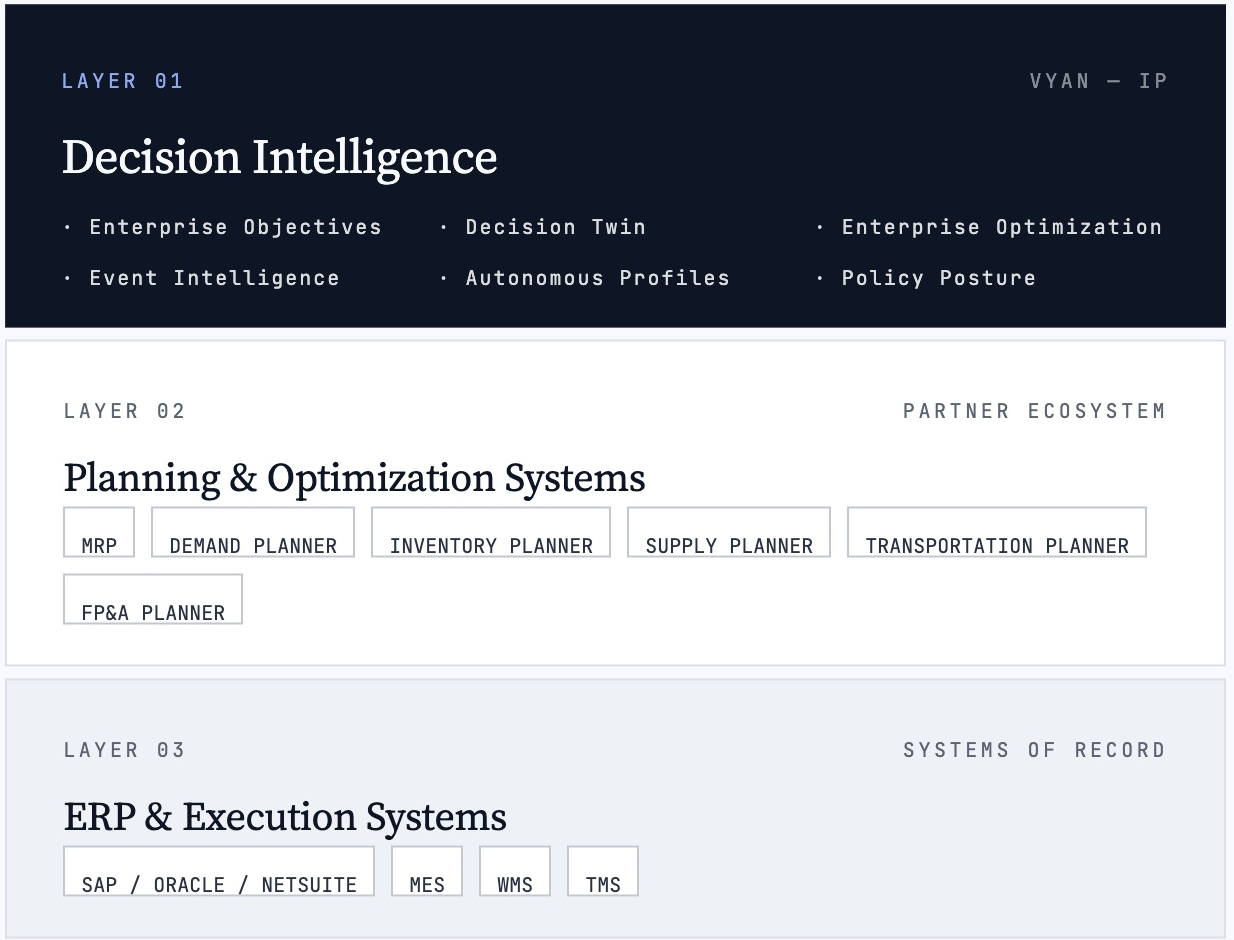
A decision layer *above* the planning stack.

Most enterprises already possess operational systems of record. ERP systems manage transactions. Planning systems generate functional plans. Execution systems coordinate fulfillment. Analytics platforms monitor performance.

What remains missing is an enterprise decision layer capable of orchestrating tradeoffs coherently across those systems.

VYAN's Decision Intelligence layer does not replace ERP, APS, or any existing planning system. It operates above them — coordinating enterprise objectives, constraints, uncertainty and economic posture across the broader operating network.

> THE SHIFT
>
> *Traditional planning asks what each function should do. Decision Intelligence asks what the enterprise should optimize.*



VALUE

Enterprise optimization changes *the shape* of enterprise economics.

The value unlocked rarely appears in a single KPI. Sequential planning creates economic friction distributed across the organization: expedites, accumulation, schedule instability, fragmented allocation, margin leakage, working capital exposure and planner intervention overhead. Each is manageable locally. Collectively they create enormous enterprise drag.

METRIC 01

Margin improvement

1.4 – 3.6% uplift

Pricing, allocation, sourcing and logistics decisions co-optimized against contribution margin.

METRIC 02

Working-capital reduction

11 – 18% reduction

Inventory positioned by policy. Procurement commitments evaluated against cash posture.

METRIC 03

Expedite reduction

35 – 55% reduction

Transportation flexibility inside the solve, not downstream recovery behavior.

METRIC 04

Service improvement

2 – 5 pp uplift

Tier-A OTIF protected under constraint. Proportional fairness retired.

METRIC 05

Revenue preservation

0.8 – 2.4% protected

Strategic demand protected. Stockouts diverted to non-strategic channels first.

METRIC 06

Planner intervention

40 – 70% reduction

Spreadsheet overrides and exception escalations collapse as the system represents tradeoffs natively.

RANGES REFLECT VYAN ANALYTICS ON INDUSTRIAL · CONSUMER · LIFE-SCIENCES PROFILES.

POSTURE-DEPENDENT.

SHADOW COSTS

Most enterprise drag is *invisible.*

Some of the most important consequences of sequential planning never appear explicitly on financial statements.

Strategic customers quietly experience inconsistent service during constrained periods and gradually shift future business elsewhere. Planners become dependent on tribal knowledge because the system cannot represent enterprise tradeoffs coherently.

Organizations over-buffer inventory rather than improve decision quality. Leadership normalizes firefighting because instability has become structurally embedded into the planning process itself.

The enterprise absorbs these costs continuously without identifying them as architectural consequences.

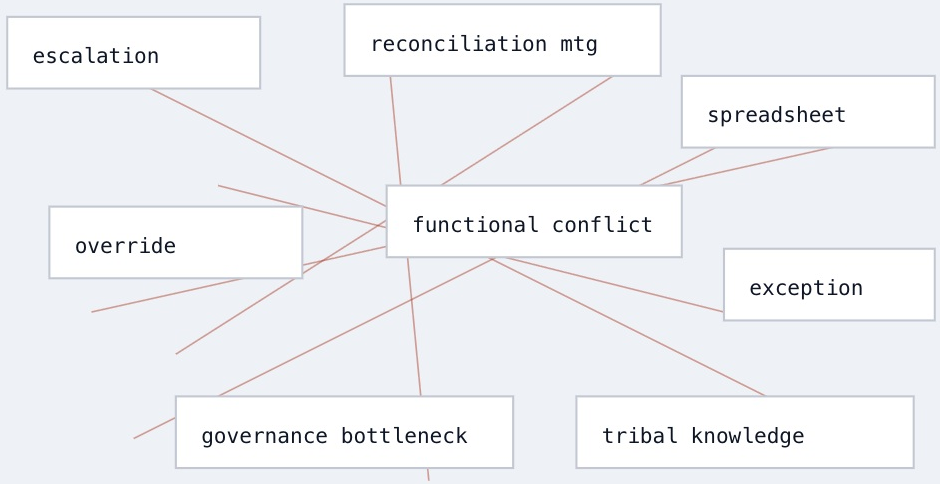
VYAN

OPERATING MODEL

Leadership moves from *firefighting* to *governing.*

CURRENT OPERATING MODEL

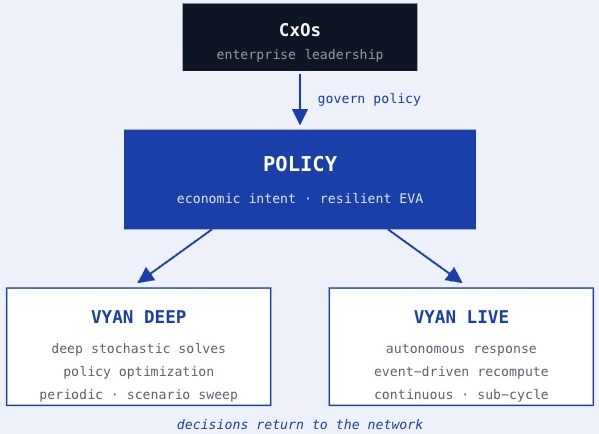
Functional negotiation as decision infrastructure.



— LEADERSHIP RECONCILES.

FUTURE OPERATING MODEL

CxOs govern policy. Solvers do the work.



— LEADERSHIP GOVERNS.

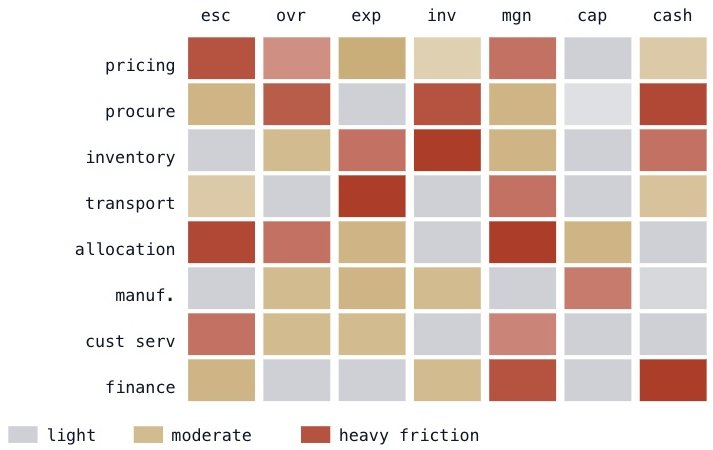
HOW WE START

Two engagements. *Decisions, not slideware.*

STEP 01 · 4–6 WEEKS — ASSESSMENT

Enterprise Optimization Assessment

A prioritized map of enterprise decisions that should move from sequential reconciliation to single-pass optimization. The output is a decision map — not a process audit.



— WHERE THE ENTERPRISE NEGOTIATES INSTEAD OF OPTIMIZES.

STEP 02 · 8–12 WEEKS — VALUE PILOT

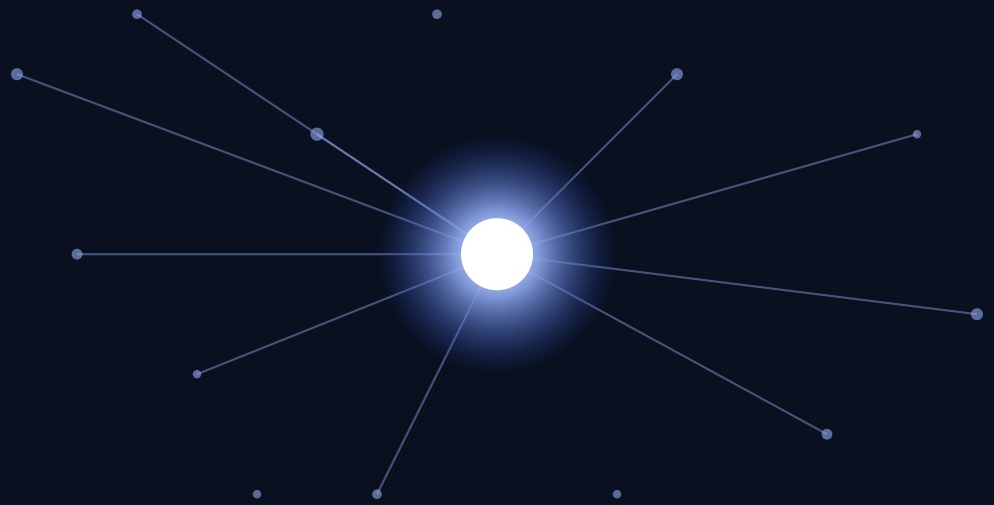
Controlled parallel run · decision-by-decision

Current planning continues as-is. In parallel, VYAN models the same decision context through a single-pass enterprise optimization lens. We compare decisions, not just metrics.

DECISION	TODAY	SINGLE-PASS	Δ VALUE
Tier-A FPGA shortage	proportional cut	100% direct, defer e-com	+$14.0M
Q4 air-freight expedite	late, reactive	planned in solve	+$240K
12-mo bearings contract	unit-cost driven	rejected — WC priced	+$3.6M
DC safety stock policy	uniform σ=1.0	dynamic per node	+$11M WC freed
Distributor pricing posture	unchanged	+3.4% lower-tier	+$880K

— DECISIONS COMPARED, NOT THEORIES.

Pilot scope · 1 segment · 1 quarter



OPTIMIZATION OR NEGOTIATION

Pick *one.*

Sequential planning was built for a world where functions could optimize locally and reconcile periodically. The enterprise already behaves as one connected system. The planning architecture must finally catch up.

VYAN