

Data Engineering Roadmap: Priorities, Milestones, and Communication



A roadmap is a decision system for sequencing bets under constraint.



Three lenses frame the session: priorities, milestones, communication.



Priorities: what to do first.
Milestones: how progress is proven.



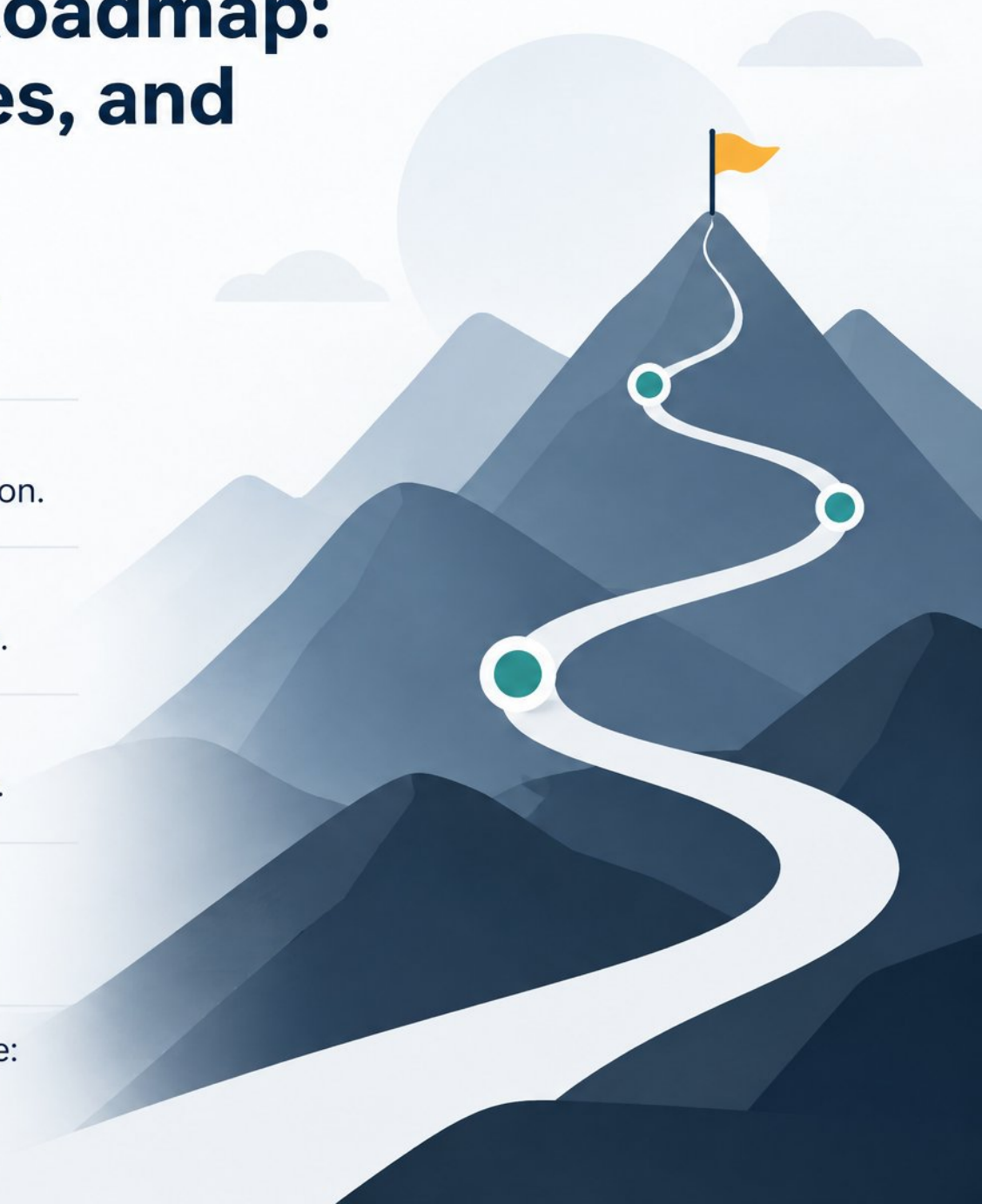
Communication: how buy-in and funding survive contact with reality.



Design against thrash, milestone theater, and late-breaking communication debt.

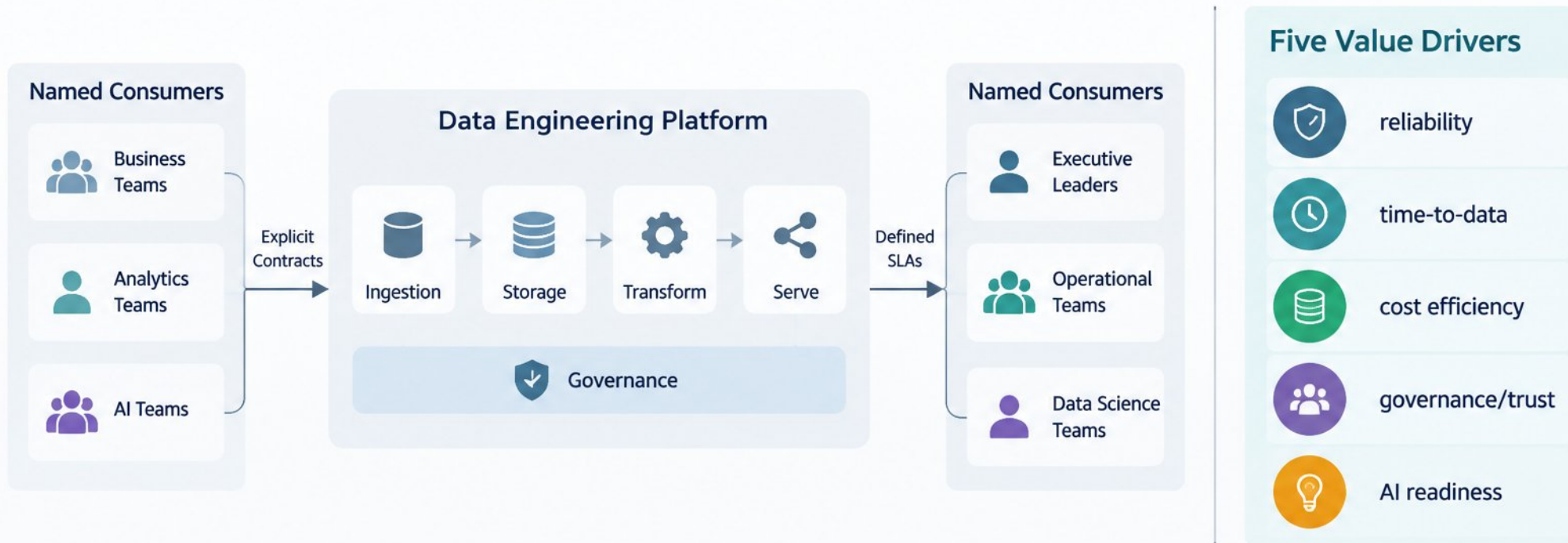


Use this deck as a quarterly cadence: build, defend, review, re-baseline.



Why Data Engineering Value Is Measured in Decisions, Not Pipelines

A roadmap is a decision system, not a Gantt chart.

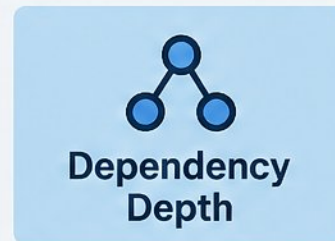


- Run data engineering as a platform-and-product function: named consumers, explicit contracts, defined SLAs.
- Make five value drivers explicit: reliability, time-to-data, cost efficiency, governance/trust, AI readiness.
- Turn vague asks into decisions: "know X within Y time so we can do Z."
- Maturity stage (reactive → standardized → scalable → AI-ready → autonomous) determines which initiatives matter.
- Score current vs. target capabilities; let the gaps define the roadmap, not vendor ambition.

Scoring Priorities: Value, Risk, Dependency Depth, and Effort

- Four inputs that survive executive review: value, risk, dependency depth, effort.
- Pick the framework to fit the decision:
 - Impact/Effort for fast grooming; RICE for team-level comparison
 - MoSCoW to negotiate scope; WSJF to sequence across teams
- WSJF: $\text{Cost of Delay} \div \text{Job Size}$; smaller, sooner jobs win.
- $\text{CoD} = \text{user value} + \text{time criticality} + \text{risk reduction/enablement}$
- Platform, product, and compliance compete on one scorecard.
- Score debt as real work; reserve 15–20% protected capacity.
- Top-5 with scoring visible — the conversation is the deliverable.

The Four Lenses



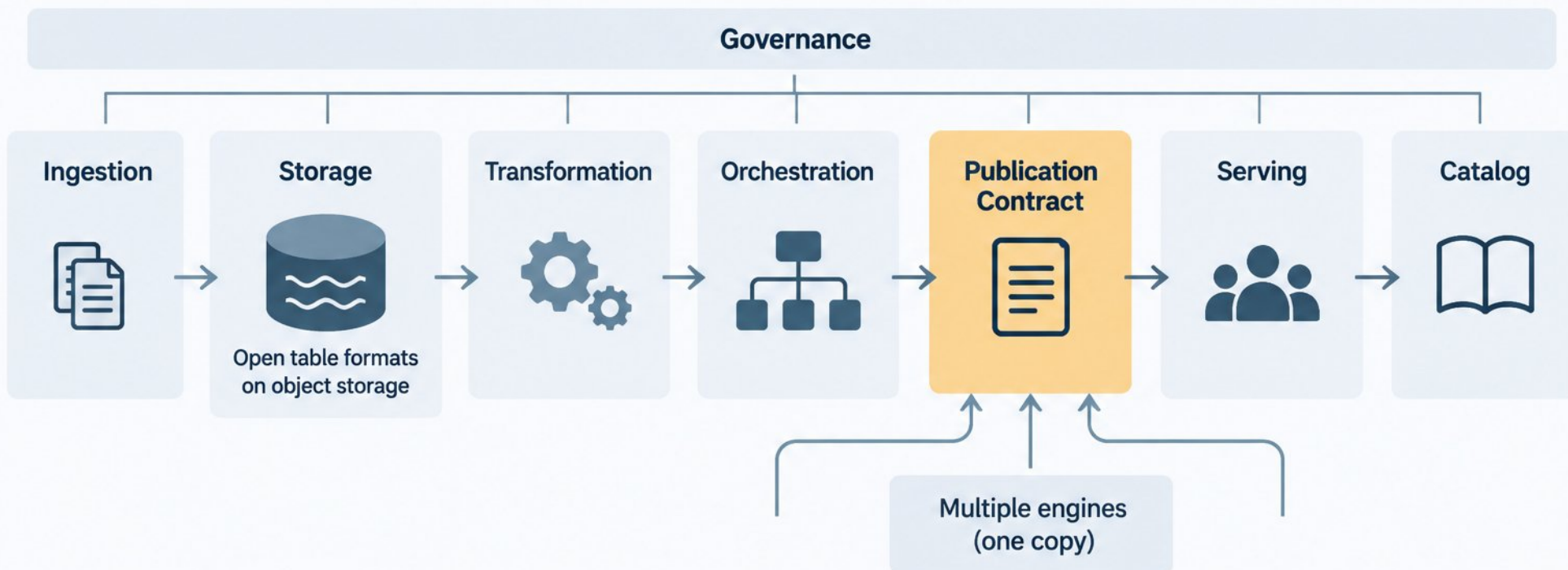
Better decisions.
Clearer trade-offs.
Stronger outcomes.

One Scorecard for All Work

Work Type	Value	Risk	Dependency Depth	Effort	WSJF
Platform					
Product					
Compliance					
Debt					

Reserve 15–20% protected capacity.

Architecture Decisions That Constrain the Roadmap



- Name the stack explicitly: ingestion, storage, transformation, orchestration, governance, serving, catalog.
- Warehouse vs. lakehouse has converged: Iceberg or Delta on object storage, many engines, one copy.
- What still matters is the publication contract: who owns the write path, which consumers, which security plane.
- Lock-in now lives in the catalog, not the table format — it decides who can write and what exit costs.
- Lakehouse carries an operations bill: compaction, snapshot expiration, manifest consolidation, workload management.
- Data contracts, backward-compatible schemas, and ADRs keep constraints defensible a quarter later.

Milestone Anatomy: Outcomes, Evidence, Owners



Outcome milestone: a business state usable today — not activity counts



Anatomy: name, entry criteria, exit criteria, evidence, named owner, window



Acceptance criteria must be binary and testable — pass or fail, nothing between



BDD framing: given precondition, when action, then observable result



Bake in non-functional requirements: freshness, latency, quality, security review

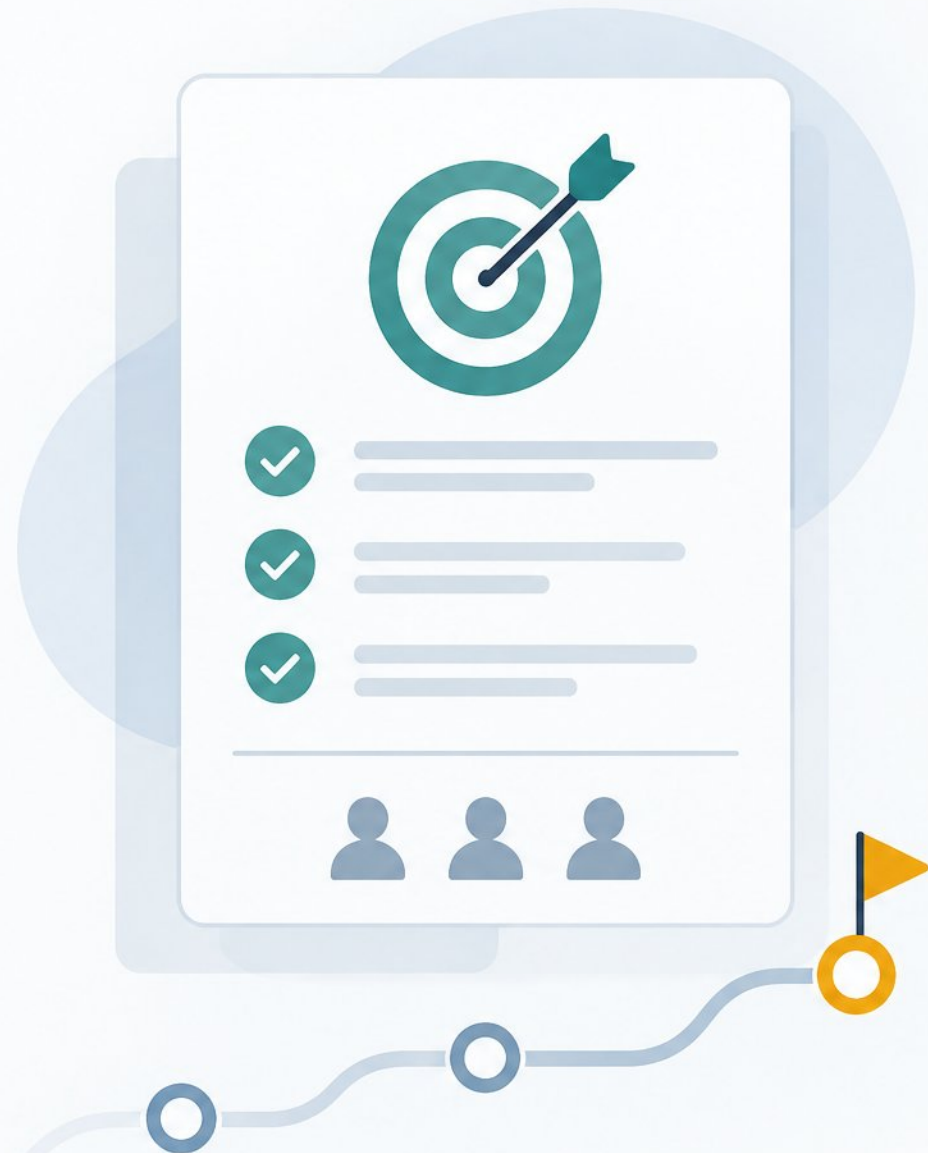


Evidence = working artifact or environment, never a guided walkthrough



Setting Data-Specific Milestone Targets

- 1 Data milestones need their own acceptance semantics — SLA/freshness adherence, quality pass rates, zero silent failures
- 2 “No exception thrown” is not convergence: pass only after K consecutive drained windows
- 3 Starting targets: SLA adherence $\geq 99.5\%$, critical quality checks $\geq 99.9\%$, recovery in tens of minutes
- 4 Define “done” in a workshop with outcome owners present — early misalignment causes later disputes
- 5 Keep the first milestone deliberately conservative to calibrate the acceptance rhythm

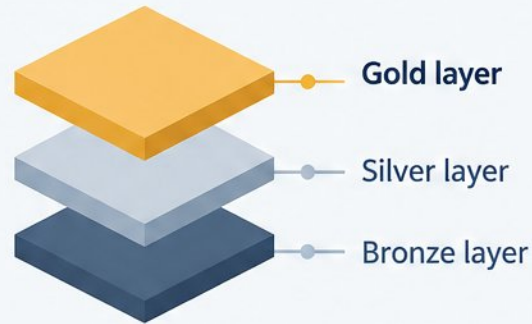


Sequencing and Delivery Cadence for Data Teams

- 1** Match phasing to constraint: foundation-first for trust, value-slice-first for political capital, risk-first for closing windows.



- 2** Ship a usable gold-layer output every sprint, not one long bronze-to-gold go-live.



- 3** Run hybrid cadence: Kanban flow for pipeline fires, time-boxed planning for net-new work.

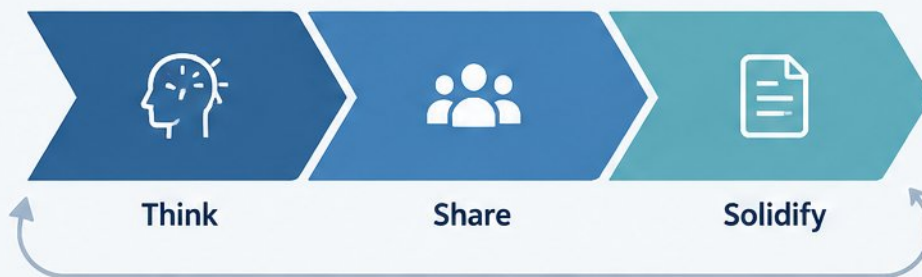
Kanban flow
for pipeline fires



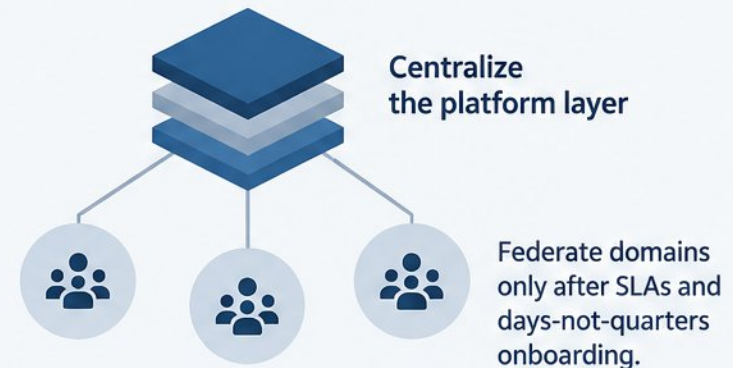
Time-boxed
planning for net-new
work



- 4** Plan quarterly as continuous flow — think, share, solidify across six weeks.

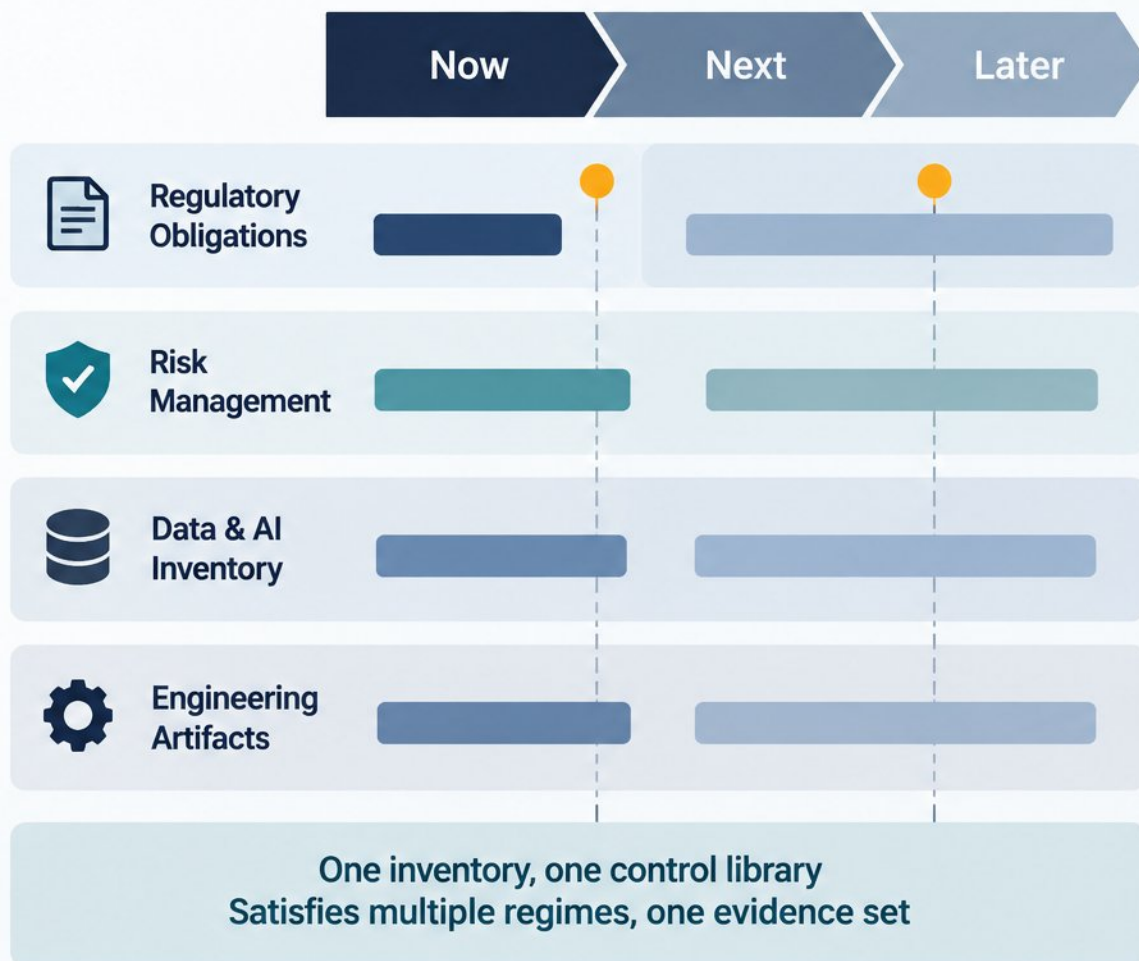


- 5** Centralize the platform layer; federate domains only after SLAs and days-not-quarters onboarding.



Governance, Risk, and Compliance as Roadmap Workstreams

- Regulatory deadlines belong on the delivery roadmap, not a parallel tracker
- Three moving regimes: EU AI Act, US state AI laws, sector rules
- EU AI Act high-risk obligations land August 2026; deferrals still provisional
- One inventory, one risk tiering: satisfies multiple regimes, one evidence set
- Governance translates into engineering artifacts — provenance, lineage, quality rules
- No lineage, no defensible audit story; AI-readiness blocked on the same gap
- Hard external deadlines are fixed constraints, not negotiable items



Communication Architecture: Audience, Message, Cadence

- Map each audience to its primary concern: execs cost/risk, leads decisions, engineers dependencies
- Per audience, name what they must hear, decide, and give you
- Lead with cost of status quo and phased investment, not platform features
- Answer four standing objections: overruns, disruption, capability gaps, vendor lock-in
- Narrative arc: current state → stakes → target state → first phase → decision requested
- Ship early wins first; three visible improvements ease socialization



The Narrative Arc

Current
state

Stakes

Target
state

First
phase

Decision
requested

Roadmap Artifacts: One Page, Many Views



Core artifact fits one page: vision, outcomes, initiatives, operating model, risks



Roadmap commits to direction and priority; timeline commits to dates



One source of truth, audience-specific views: phase view, dependency view, work board



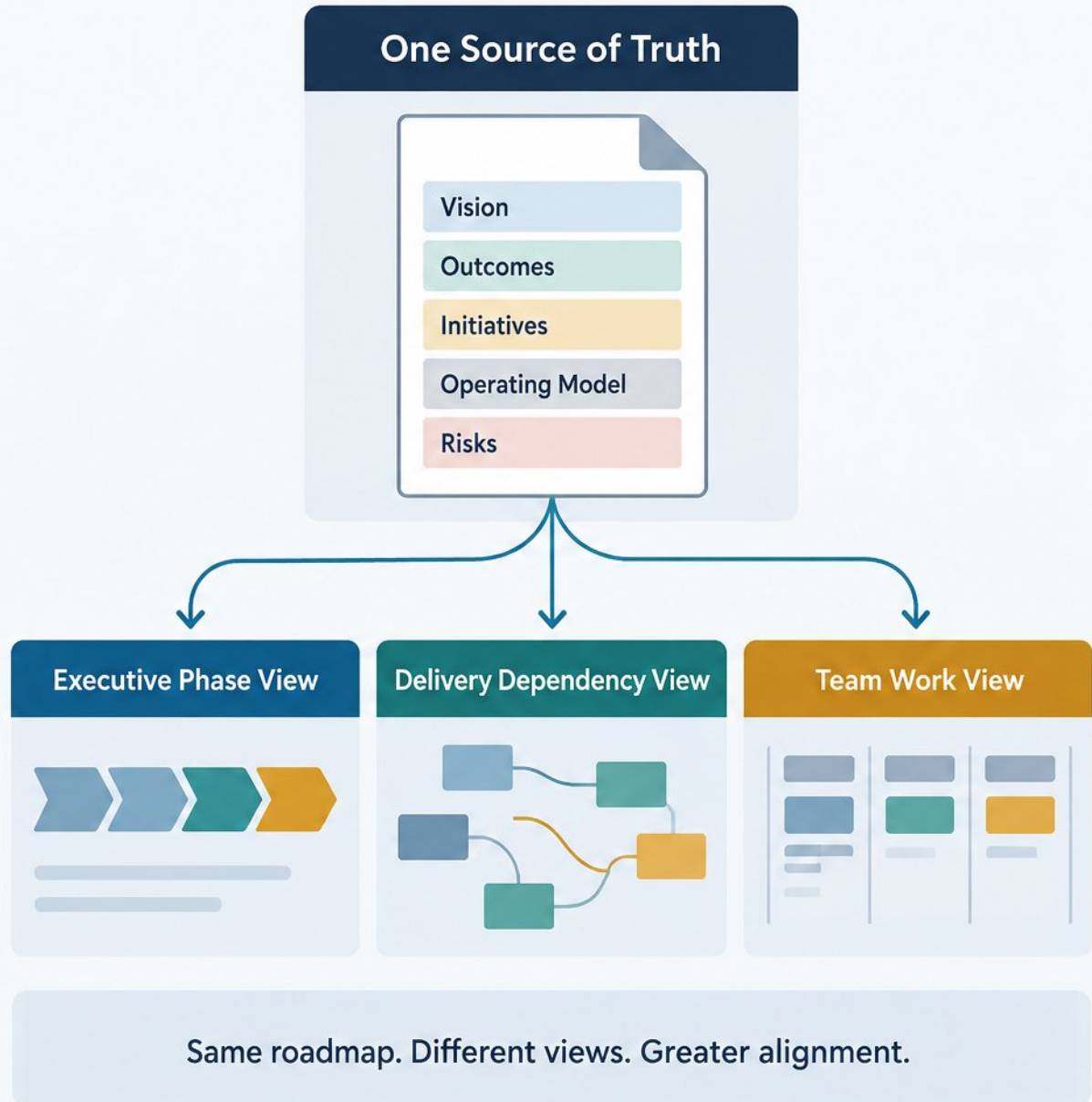
Include quarterly capability statements and five to eight program-level milestones



Make cross-team dependencies and shared-resource demand explicit and comparable



Connect the artifact to where work lives, or it will be ignored



Metrics, Reviews, and Trigger-Based Re-planning



- Separate delivery metrics (throughput, cycle time, SLA adherence) from roadmap health (milestone hit rate, slippage)



- Track data-specific DORA: ship-to-consumer frequency, request-to-usable-data lead time, post-release quality incidents



- Track cost and value together: idea-to-production time, cost per unit of value, reuse rate across programs



- Re-baseline on triggers, not habit: systemic slip, new regulation, sponsor change, capacity variance



- Run monthly operational pass plus a 60-minute quarterly review: look back, around, forward

Now

Next

Later

A CLEARER PATH FORWARD

Workshop: Building a Two-Quarter Roadmap (Part 1)



Scenario: fragmented pipelines, three competing revenue definitions, AI deadline on untrustworthy data

1



Step 1 —

Translate vague asks into decisions:
“know X, within Y time, to do Z”

2



Step 2 —

Segment workloads into seams; assign each an owner, contract, failure policy

3



Step 3 —

Score all candidates with WSJF; publish scoring, not just ranking

4



Step 4 —

Lock top-5 with protected capacity for debt and unplanned work

Four-Lens Decision View



Value



Risk



Dependency
Depth



Effort

Workshop: Building a Two-Quarter Roadmap (Part 2)

5

Step 5: six to eight outcome milestones — criteria, evidence, owner, window



6

Step 6: sequence with visible dependencies; build executive, delivery, and team views



7

Step 7: communication plan — audience, message, decision, cadence, standing objections



8

Step 8: define re-planning triggers; calendar recurring reviews before quarter start



9

Step 9: stress-test against earlier compliance deadline, source/sponsor change, mandated scope



Close: one-page operating model — decision rights, triage, metric ownership, SLAs

First 90 Days: Turning the Outline into a Working Cadence



Weeks 1–2

- one-page diagnostic; red/yellow/green status; 3–5 no-regret fixes in 30 days



Weeks 3–6

- score backlog on one criteria set; stand up milestone template (entry, exit, evidence, owner)



Weeks 7–10

- audience-specific views; first executive summary; lock recurring review calendar



Weeks 11–13

- first look-back/look-around/look-forward review; exercise one re-planning trigger

Operating Habits and Signals



Habits

- one owner per initiative;
- one shared value definition;
- no silent scope drift



Signals of success over two quarters

- decisions happened,
- cycle time improved,
- leadership acts on numbers

Audience-to-Message Map



Executives



Managers



Teams



Milestone:
Accepted



Milestone:
Rejected

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