

#FABCONSQLCON2026

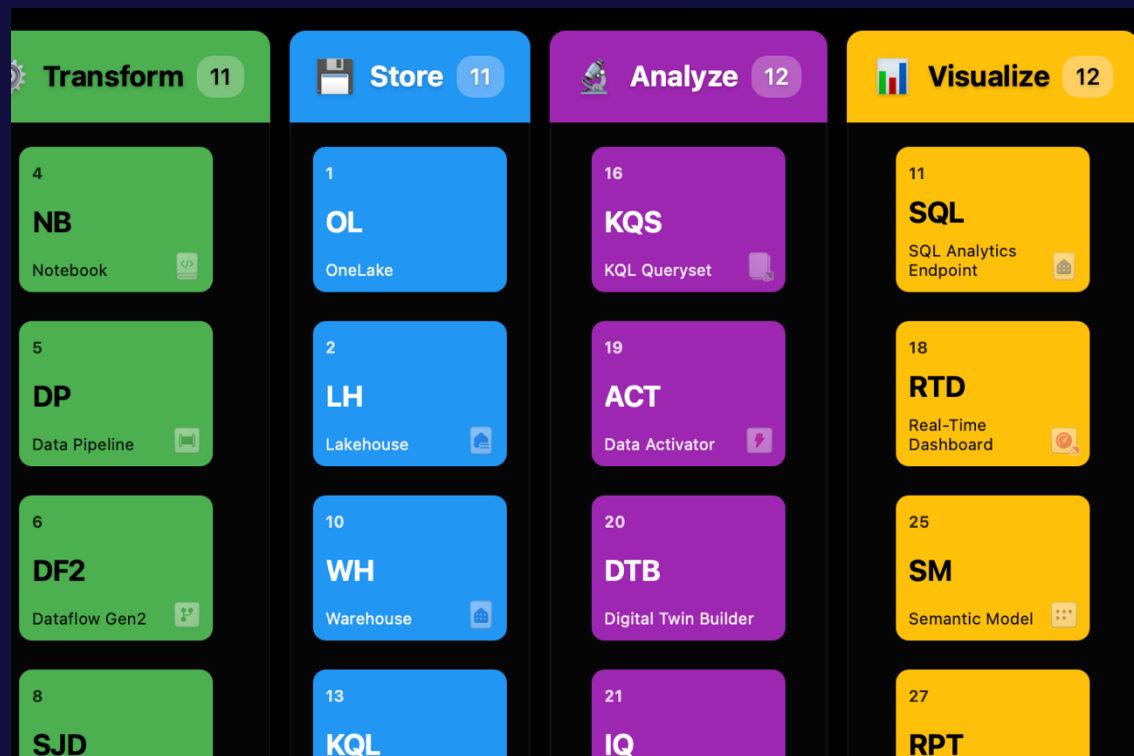
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Microsoft Fabric  
COMMUNITY CONFERENCE

**SQLCON**

Microsoft SQL  
COMMUNITY CONFERENCE

**ATLANTA** MARCH 16 - 20, 2026



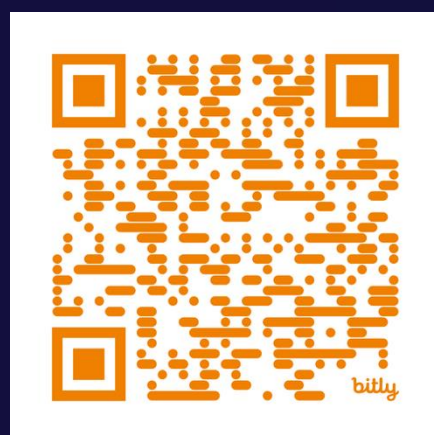
# Proven Fabric Architecture Patterns to Minimize Refactoring

From 20+ Implementations: The Decisions, The Traps, The Patterns

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# Matthias Falland



Microsoft Data Platform MVP

Creator of [www.fabricperiodictable.com](http://www.fabricperiodictable.com)

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100+ workspaces.  
16 per subject area.

\$90K to rebuild views for a migration they didn't need.

*- r/MicrosoftFabric, r/PowerBI*



# The Microsoft Fabric Periodic Table

Exploring Microsoft Fabric, one element at a time.



Search Microsoft Fabric resources...



1 of 64 filtered items

[Clear All](#)

Status

GA 50 Preview 12

Deprecated 1 Legacy 1

Show Deprecated Items

**New Item Category**

- Get data 9
- Prepare data 9
- Analyze and train data 9
- Store data 8
- Develop data 6
- Track data 6

Ingest (5)	Transform (11)	Store (11)	Analyze (12)	Visualize (12)	Govern (13)
3 SHC Shortcut	4 NB Notebook	1 OL OneLake	16 KQS KQL Queryset	11 SQL SQL Analytics Endpoint	7 ENV Environment
9 MDB Mirrored Database	5 DP Data Pipeline	2 LH Lakehouse	19 ACT Data Activator	18 RTD Real-Time Dashboard	32 ESS Event Schema Set
15 ES Eventstream	6 DF2 Dataflow Gen2	10 WH Warehouse	20 DTB Digital Twin Builder	25 SM Semantic Model	37 WS Workspace
17 RTH Real-Time Hub	8 SJD Spark Job Definition	13 KQL KQL Database	21 IQ Fabric IQ	27 RPT Report	38 CAP Capacity
24	26	14	22	29	39

# fabricperiodictable.com

# The Decisions

Every one of these was reasonable.

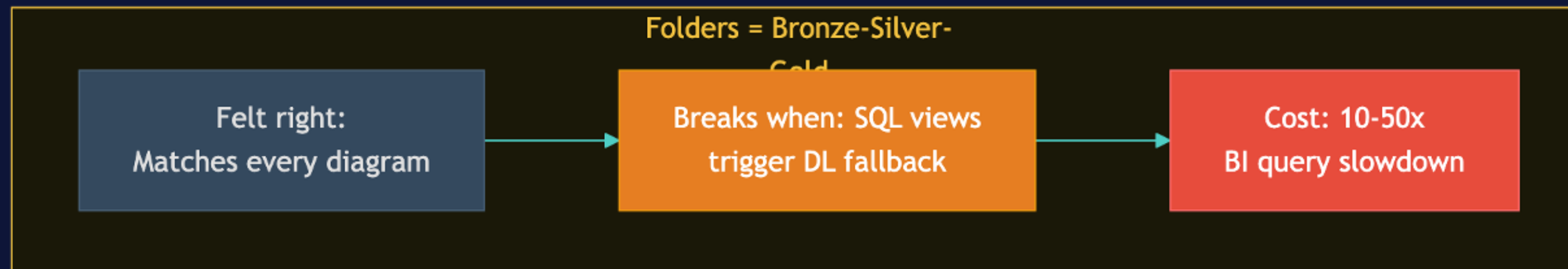
# "One Workspace Is Simpler"

- One workspace for everything – less overhead, faster to set up, everything in one place
- Team 2 joins. Team 3. 200 items. A test notebook consumes all CUs. Production goes blank.
- Moving items between workspaces = shortcuts break, permissions reset, pipelines fail. No bulk tool exists.



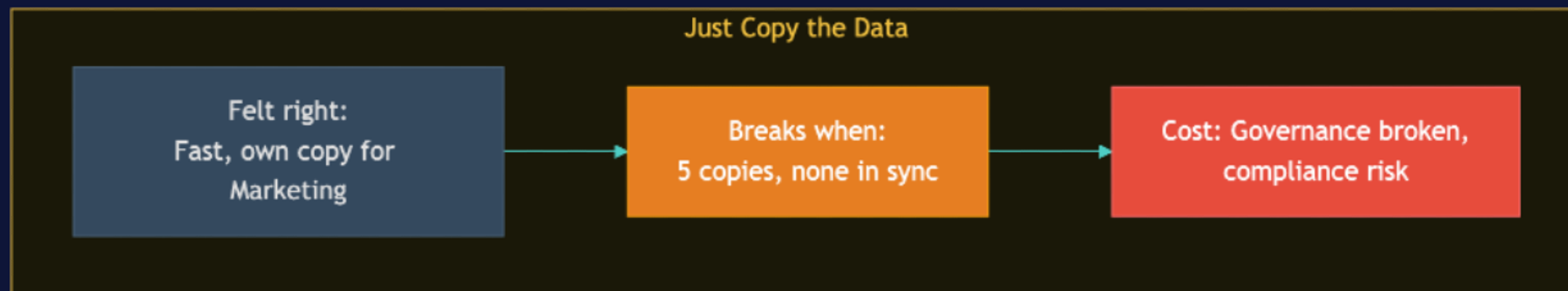
# "Folders Are Good Enough"

- Three folders, three layers – looks exactly like every medallion diagram
- BI team can't access Gold without seeing Bronze. Bronze ingestion starves Gold queries. SQL views trigger Direct Lake fallback silently.
- Splitting later means rewriting every notebook path, every shortcut reference, every pipeline



# "Copy for Sharing – It's Fast"

- Copy the data – Marketing needs it today, not after a three-week governance review
- Five copies. None in sync. Sales updates a customer, Marketing sees it in days – or never. GDPR deletion: which copies?
- The data owner loses control. In regulated industries: compliance risk, not just technical debt.

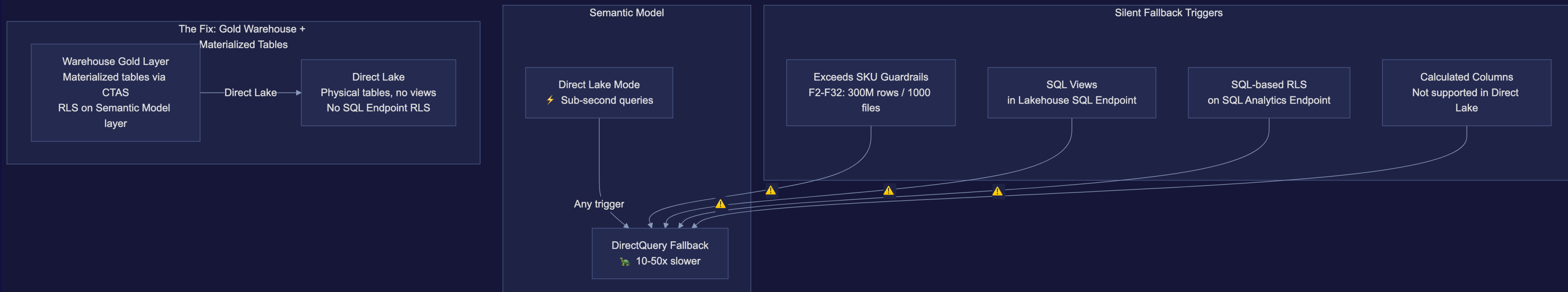


# The Traps

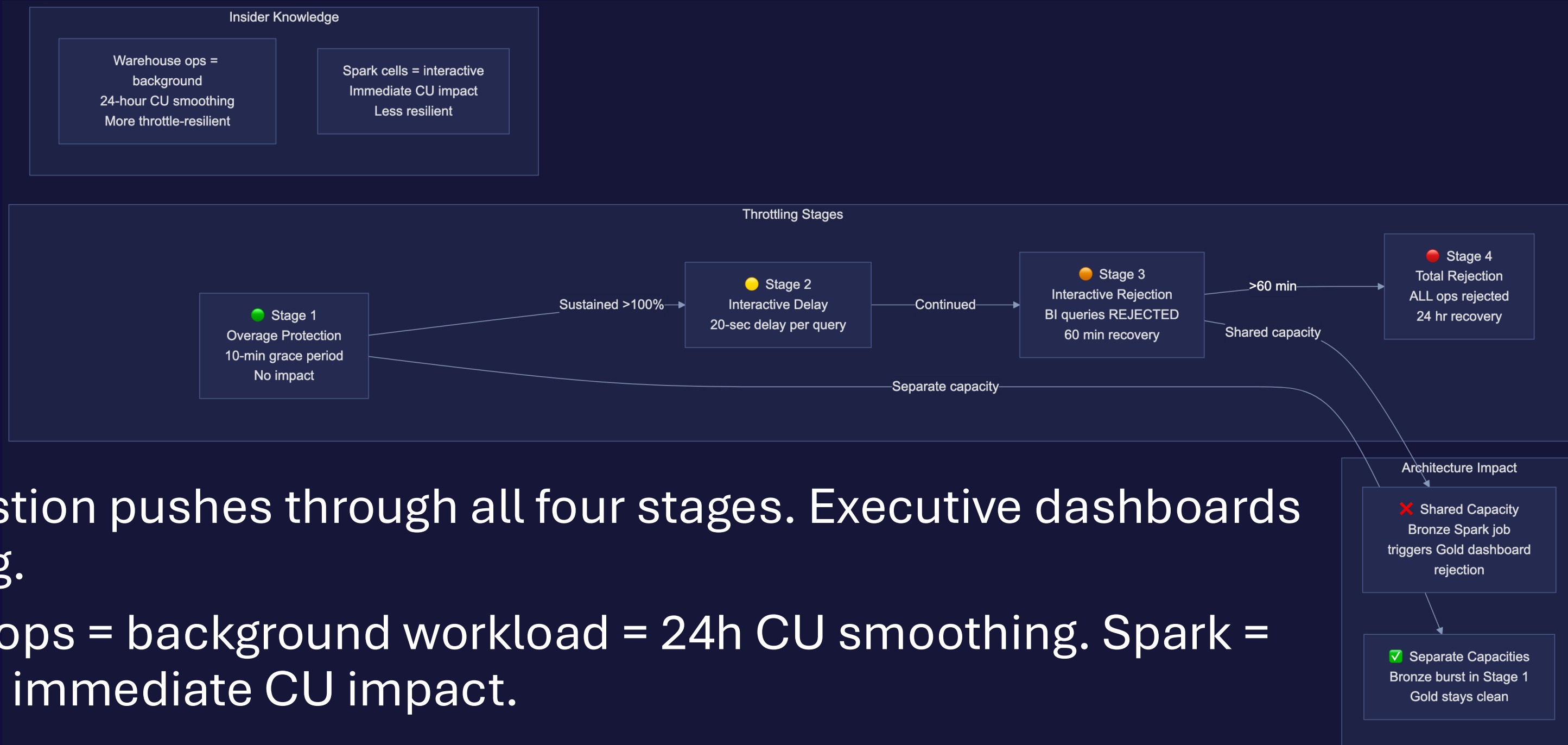
Here's what breaks – and you won't see it coming.

# [T1] Direct Lake Silent Fallback

- SQL views → fallback. SQL Endpoint RLS → fallback. Calculated columns → fallback.
- 0.5 seconds → 30 seconds. No error. No warning. It just gets slow.



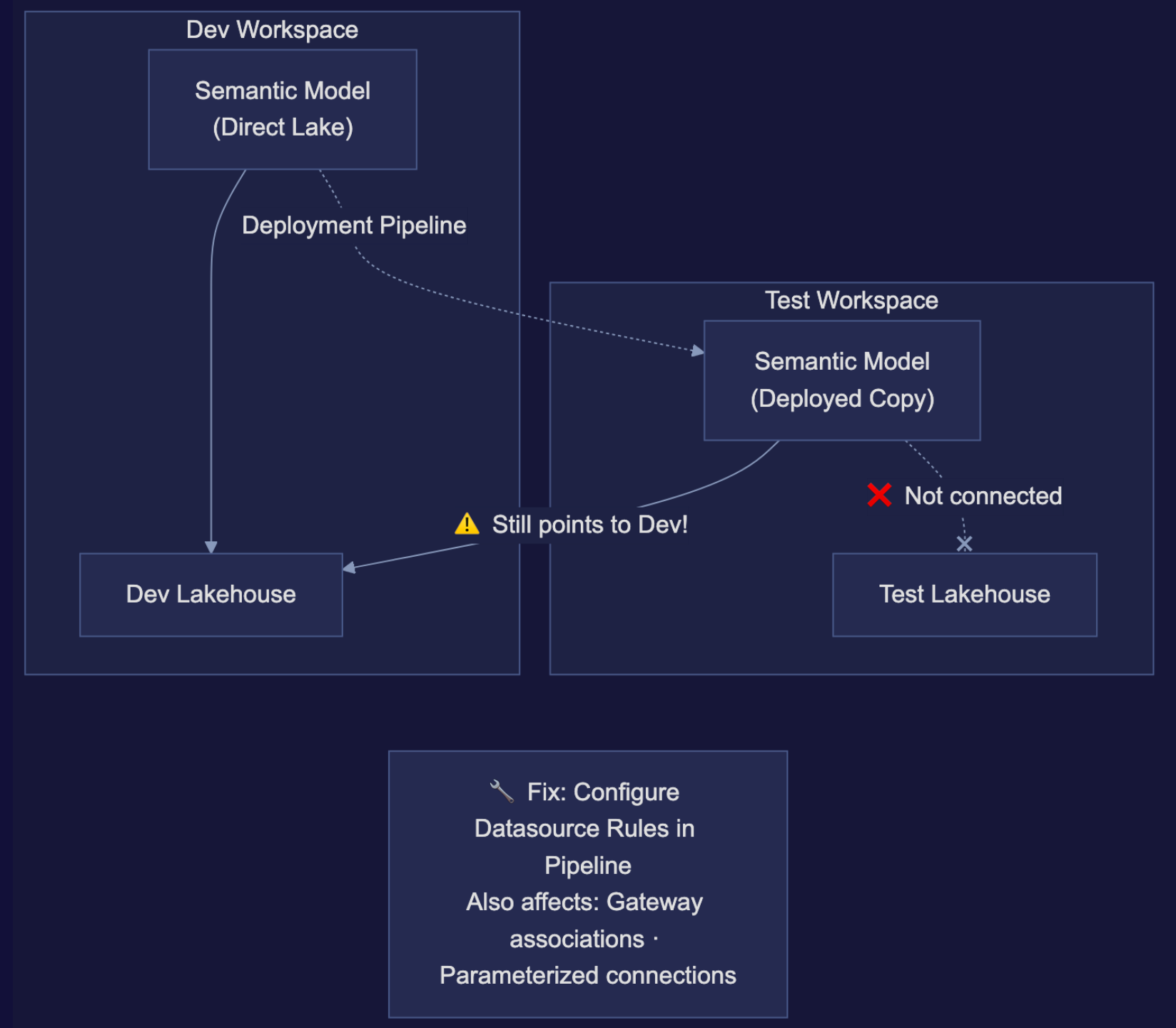
# [T2] Capacity Throttling Cascade



- Bronze ingestion pushes through all four stages. Executive dashboards stop working.
- Warehouse ops = background workload = 24h CU smoothing. Spark = interactive = immediate CU impact.

# [T3] Deployment Pipeline Binding

- The semantic model arrives in Test ... still pointing to Dev data. Nobody notices for weeks.
- Must manually create datasource rules. Also affects: gateway associations, parameterized connections, item pairing.



# [T4] Workspace Migration Is Architectural Surgery

- Every month you wait to split, migration cost grows quadratically. Not linearly.
- Dataflow Gen2 creates INVISIBLE staging items tied to the capacity region. Delete all DFG2 items first. Then find the now-visible staging items. Then reassign.

## 🔗 Shortcuts Break

Every shortcut from other workspaces becomes invalid

No bulk operation —  
20 consumers =  
20 manual recreations

## 🔄 Pipelines Depair

Items don't re-pair with Dev / Test / Prod counterparts

Phantom duplicates nobody notices for weeks

## 👻 DFG2 Blocks Move

Creates invisible staging Lakehouse + Warehouse

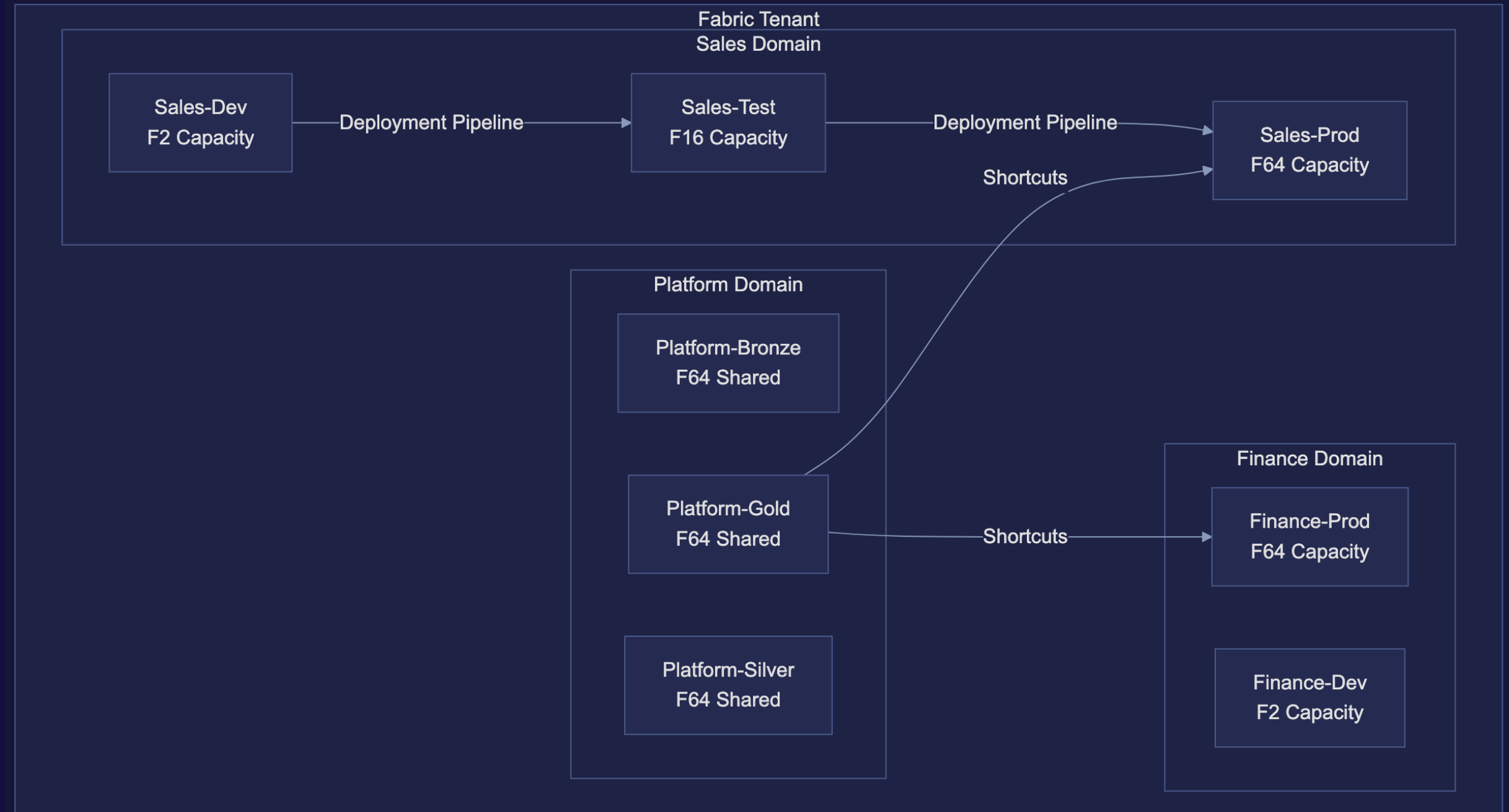
Tied to capacity region — blocks workspace reassignment entirely

# The Patterns

Three pattern families, each preventing one trap family.

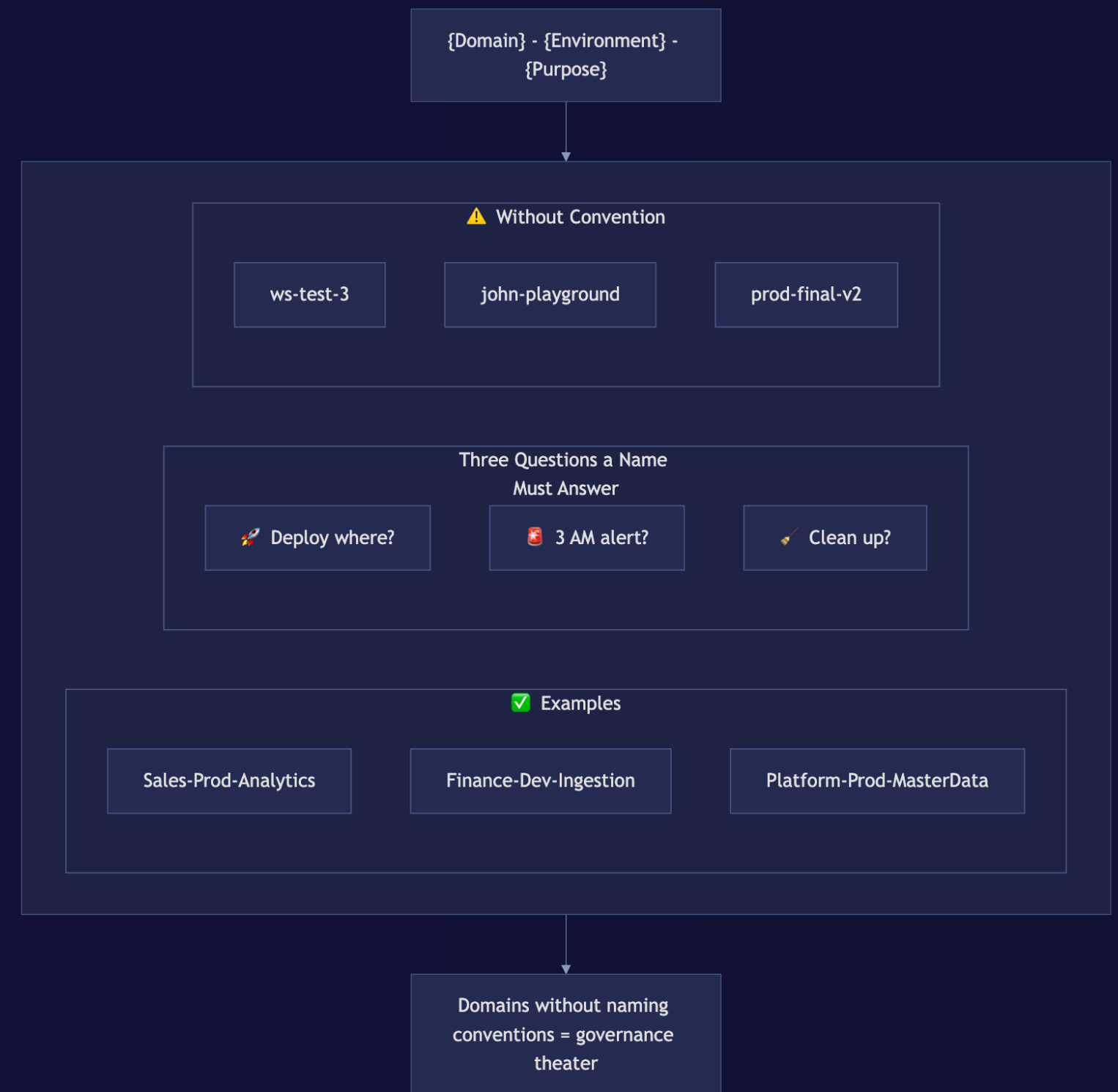
# Pattern 1: Domain + Workspace Topology

- Pattern 1: Workspace Topology – prevents Traps 2 (Throttling), 4 (Surgery)

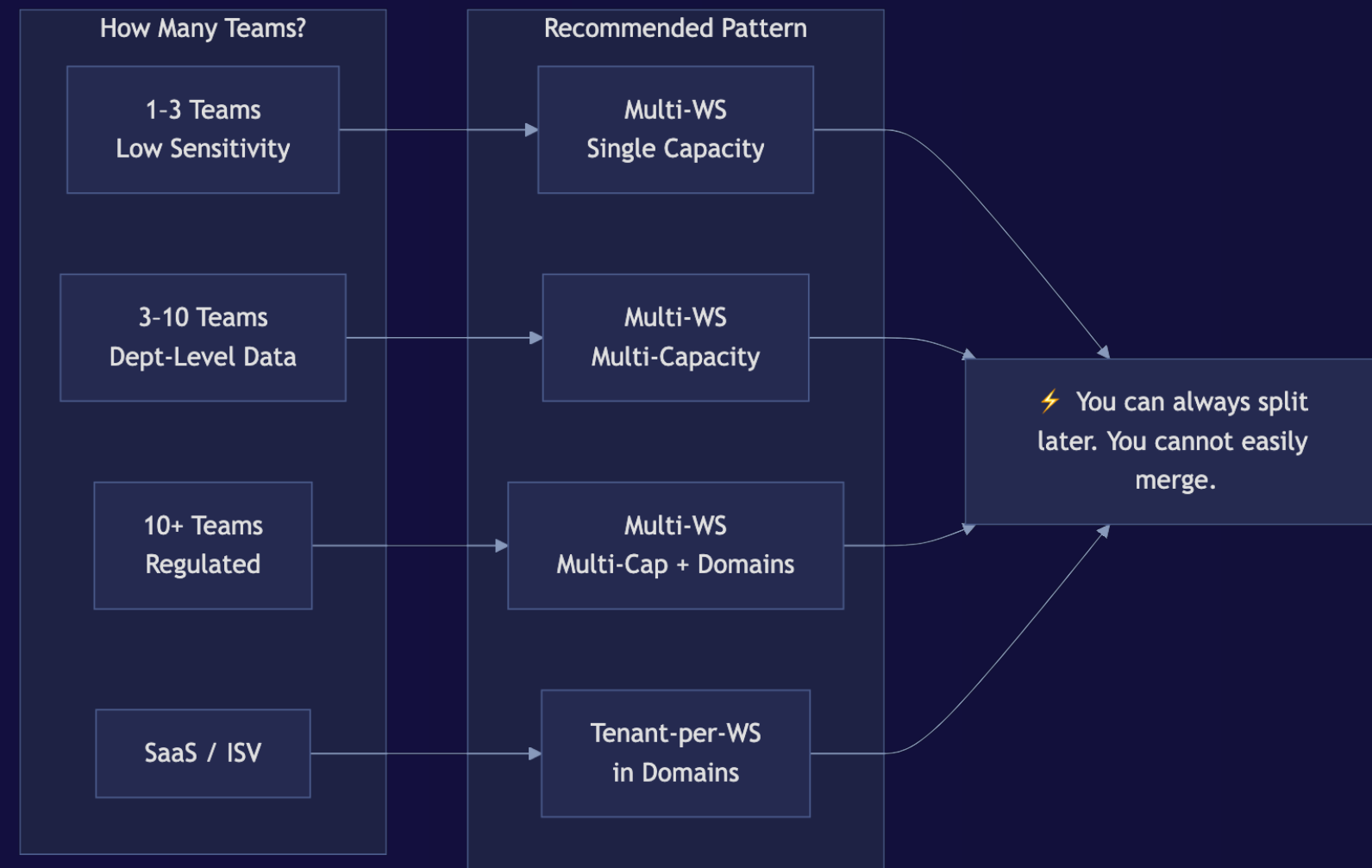


# [P1] Naming Convention: The Most Underrated Architecture Decision

- (1) "Which workspace do I deploy to?" .
- (2) "Which workspace did this 3 AM alert come from?" .
- (3) "Which workspaces can I clean up?"»
- Domains without naming conventions = governance theater. The label says 'Sales.' The workspace named 'ws-test-3' says chaos.



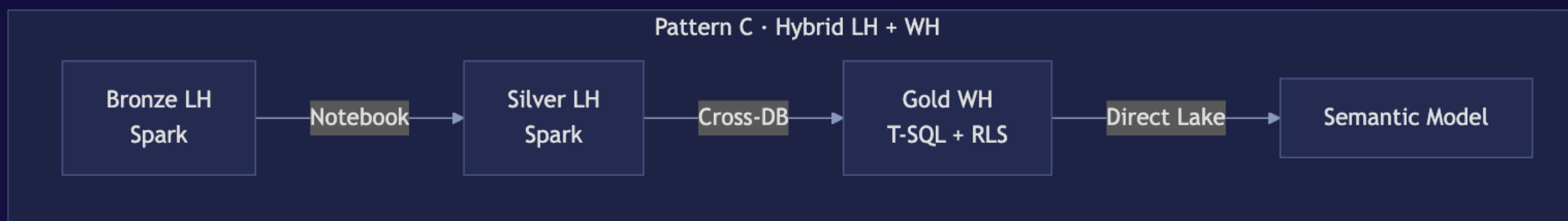
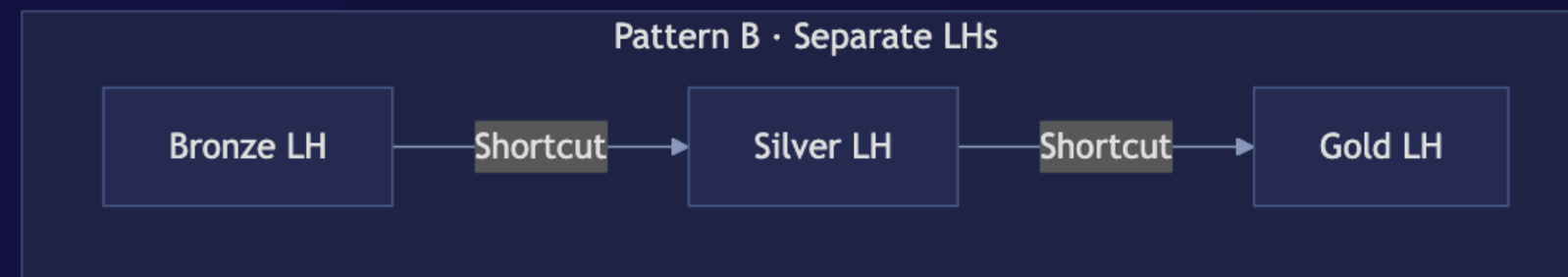
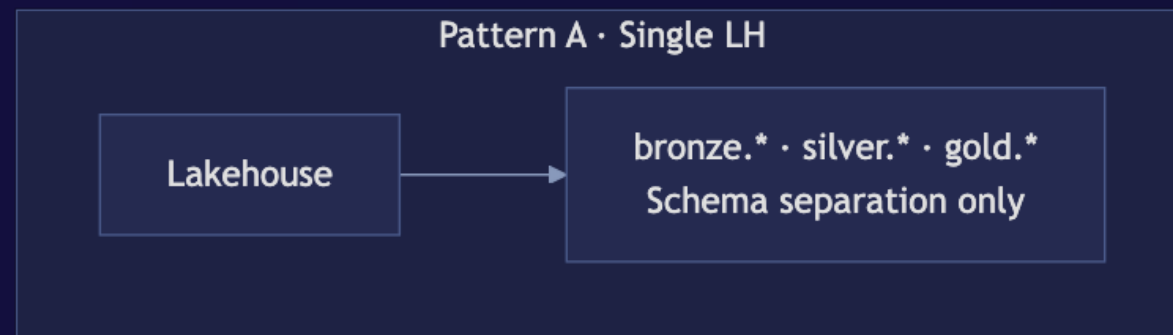
# [P1] Decision Matrix + Key Principle



- 1-3 teams low sensitivity → Multi-WS single capacity.
- 3-10 teams dept-level → Multi-WS multi-capacity.
- 10+ regulated → Multi-WS multi-cap + domains. SaaS → Tenant-per-WS in domains.

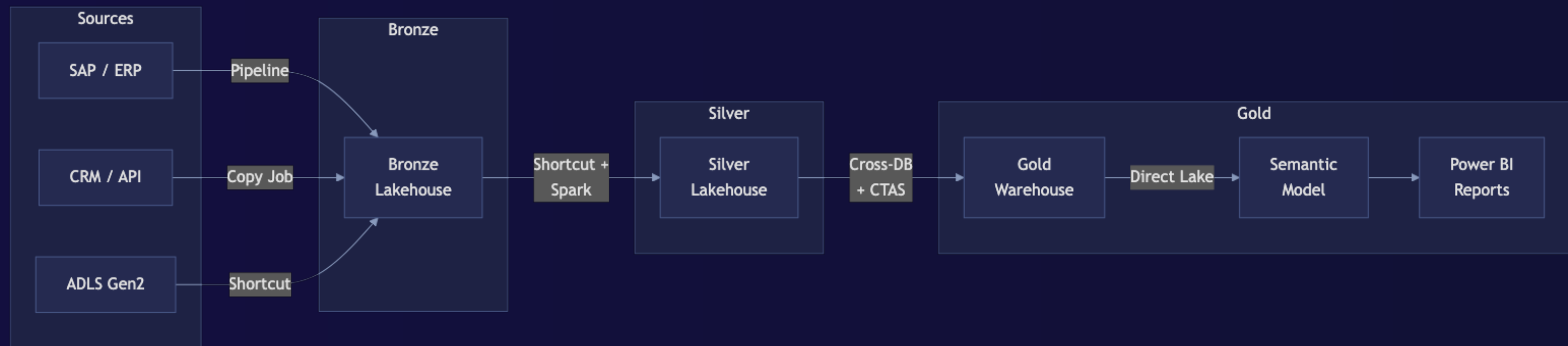
# Pattern 2: Medallion Implementations

- A: Single Lakehouse + Schemas (POC only).
- B: Separate Lakehouses per workspace (Microsoft-recommended).
- C: Hybrid LH + Warehouse Gold (enterprise + SQL features).
- Prevents Trap 1 (Direct Lake Fallback)



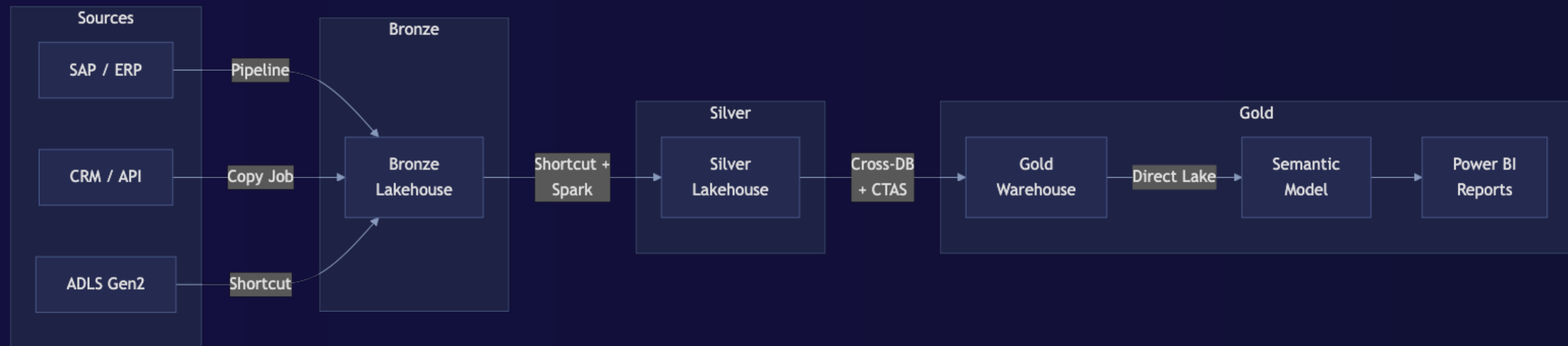
# [P2] The Direct Lake Trap Solution

- No SQL views = no fallback. RLS on semantic model = no fallback. Physical tables via CTAS = Direct Lake stays in Direct Lake mode.
- One more Fabric item to manage. Worth it: no production performance cliff.



# [P2] Why Silver Is the Layer That Saves Your Architecture

- Design Silver first. Not Bronze, not Gold. Silver is your foundation.
- Silver is the layer where source system changes get absorbed before they reach Gold consumers.



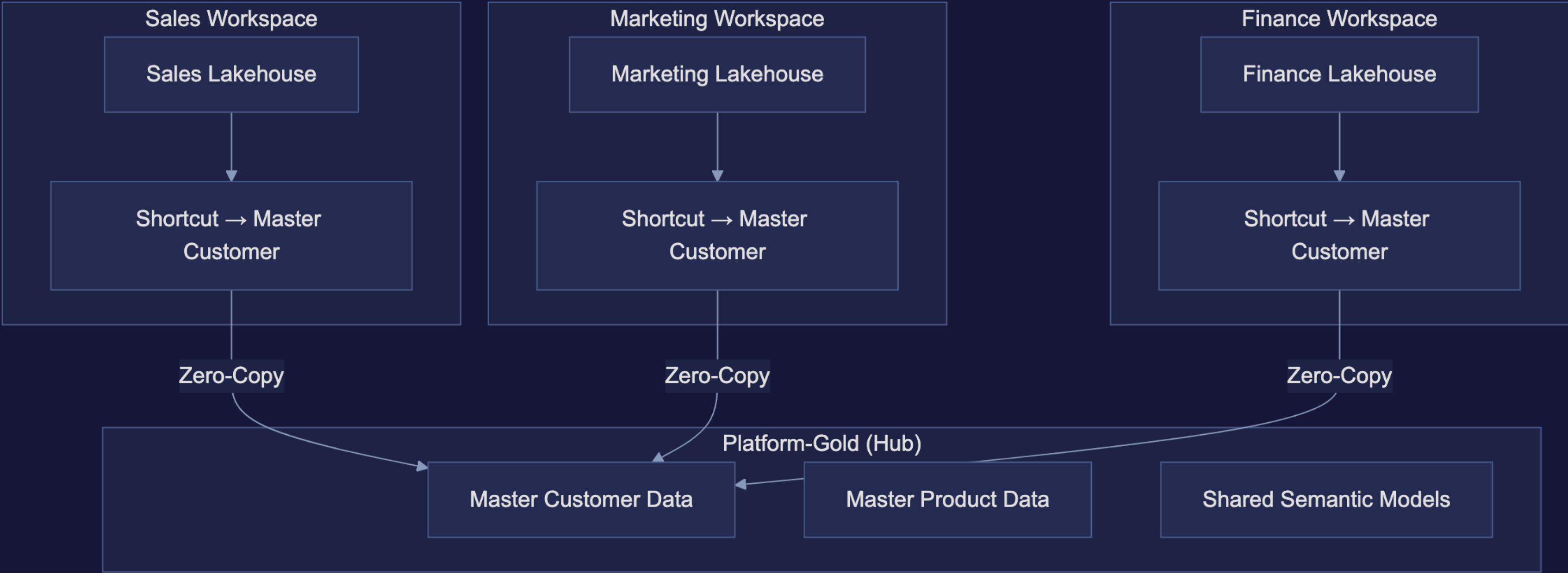
# Pattern 3: Cross-Workspace Sharing

Prevents Trap 3 (X-Pipeline Binding)

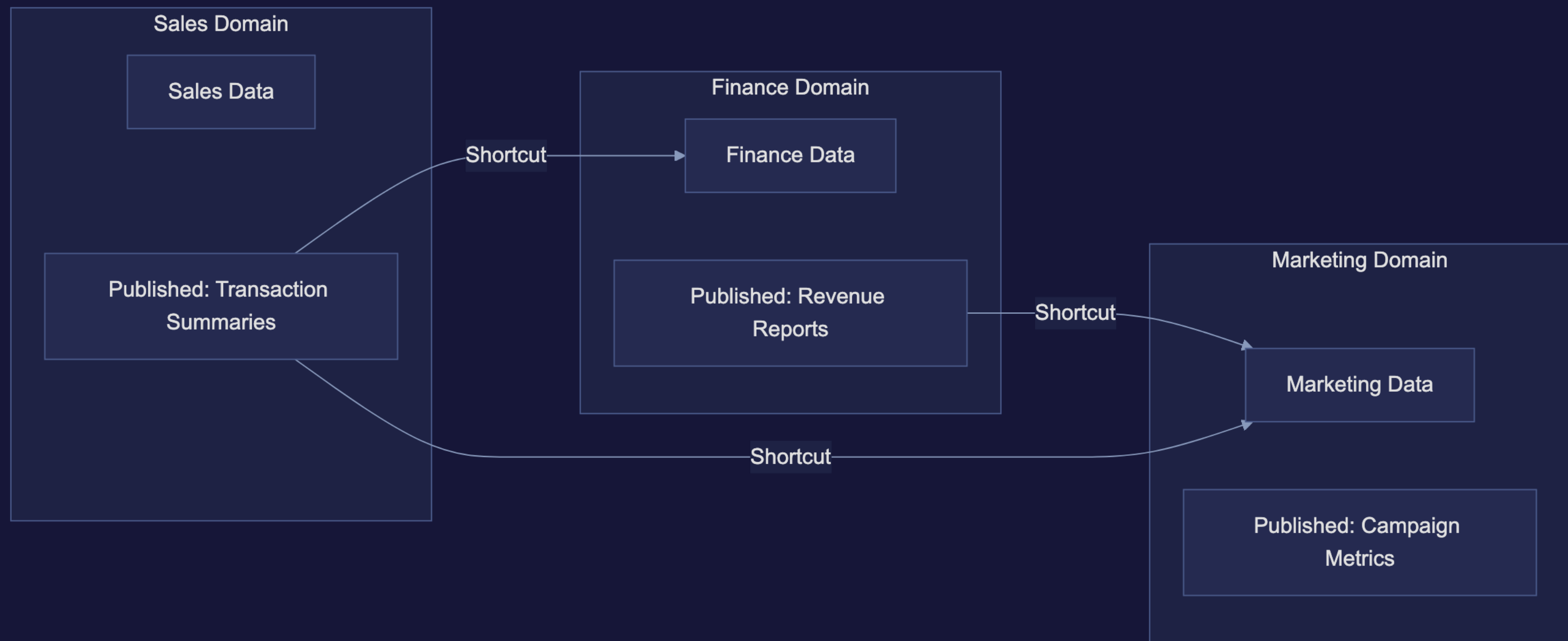
The Shortcut costs nobody talks about

- Consumer pays, not source
- Hub barely registers reads – spokes pay
- Paused source capacity: data still accessible via shortcuts (OneLake storage persists)
- "Cold storage" workspace pattern
- *"'Zero-copy' doesn't mean 'zero-cost'. It means the CONSUMER always pays."*

# [P3] Sharing Patterns

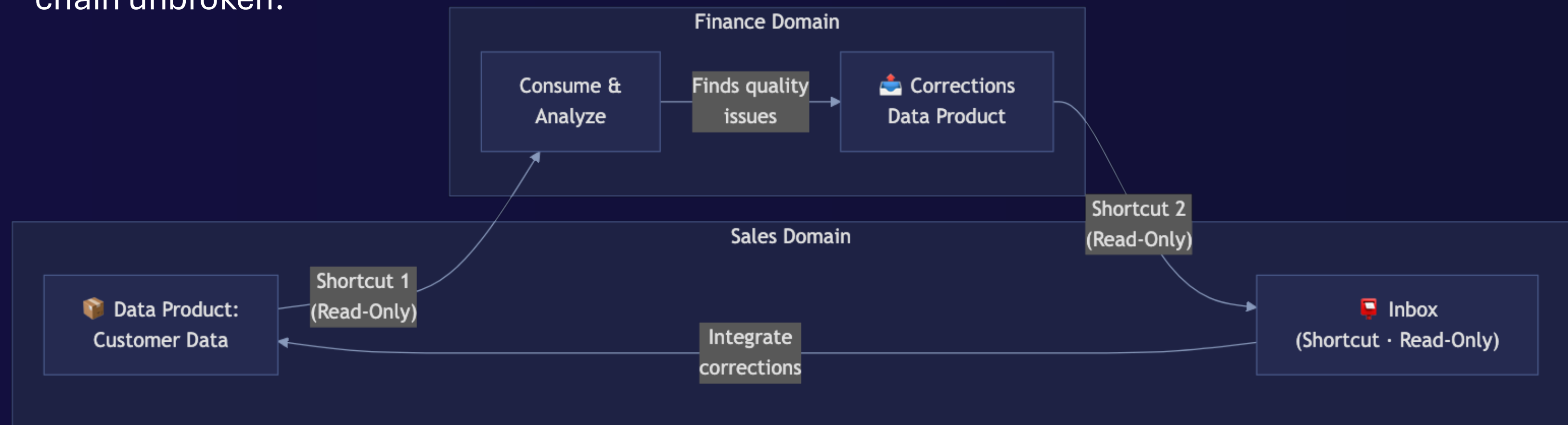


# [P3] Sharing Patterns



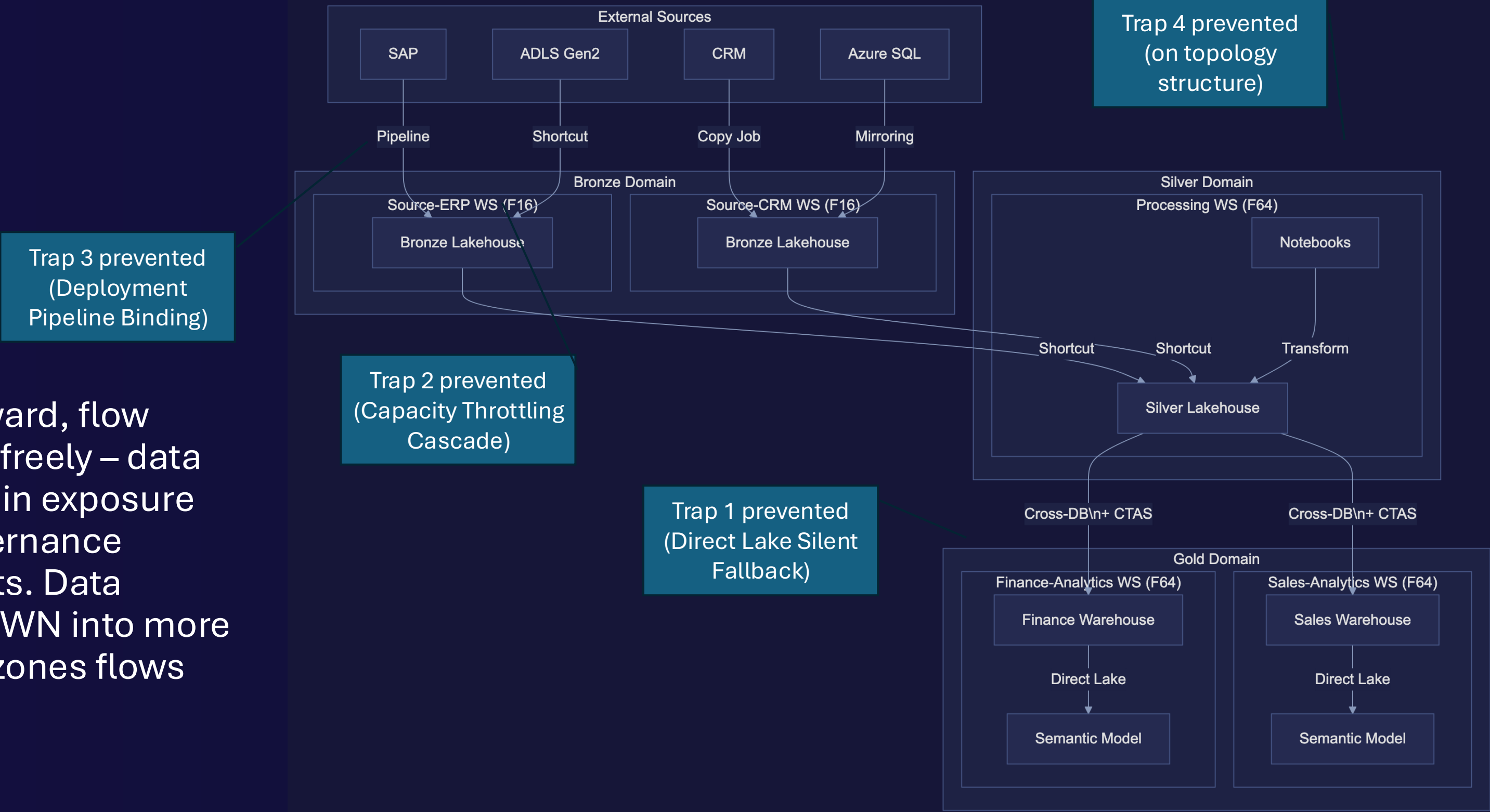
# [P3] Sharing Patterns + The Inbox Pattern

- But what about writeback? Finance finds data quality issues in Sales' data. How does Finance send corrections BACK without write access?
- The Inbox Pattern: Finance publishes corrections as THEIR OWN data product. Sales reads via read-only shortcut. Both shortcuts read-only. Neither domain writes to the other's storage. Governance chain unbroken.



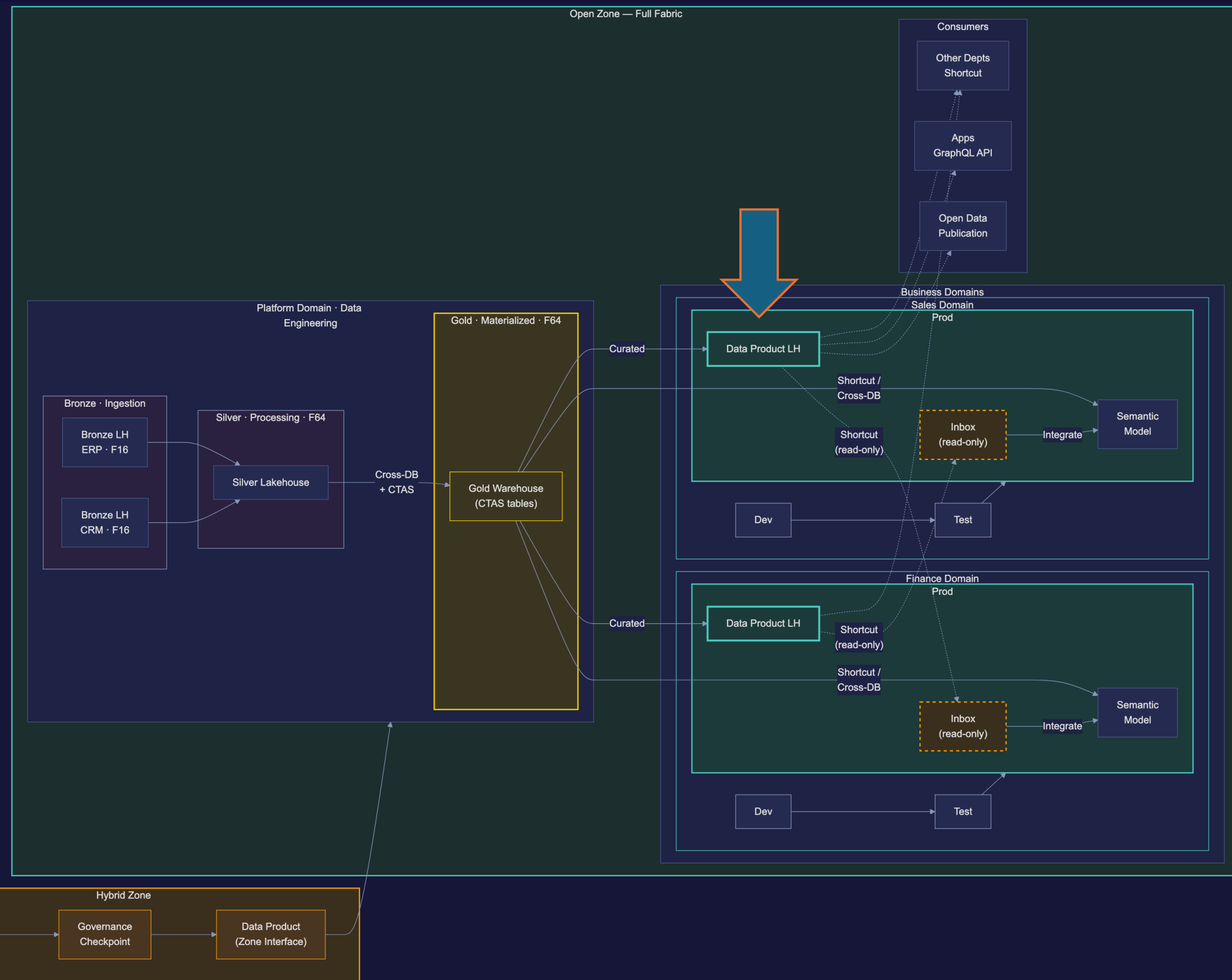
# Full Reference Architecture

- Check upward, flow downward freely – data flowing UP in exposure needs governance checkpoints. Data flowing DOWN into more protected zones flows freely.

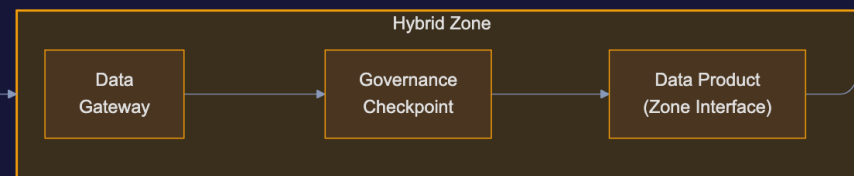
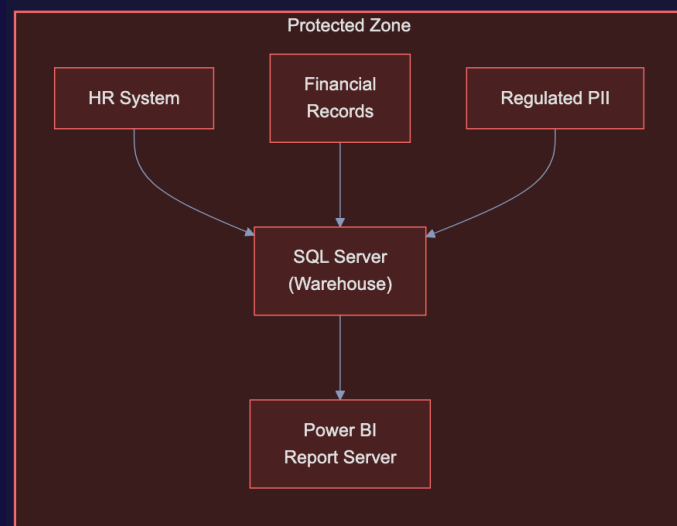


# Full Reference Architecture II

- Now we combine Pattern 2 (Medallion) with Pattern 3 (Sharing) for X-Domain-Sharing based on data products
- And we have a zone model for compliance



FLOW FREELY  
Analytics → Protected Zone  
via Report Server



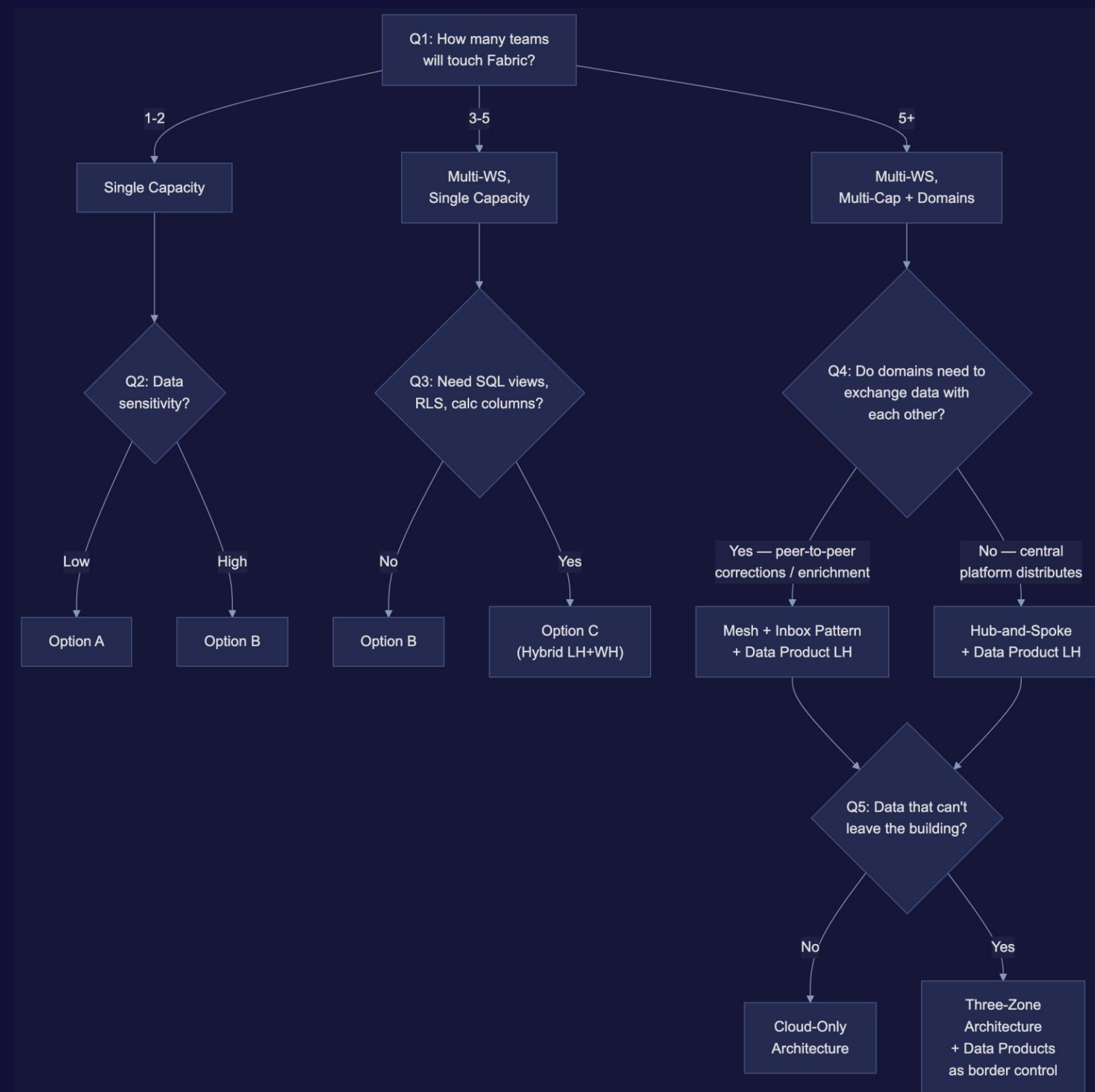
CHECK UPWARD

# The Framework

Five questions. Thirty minutes. Some insights.

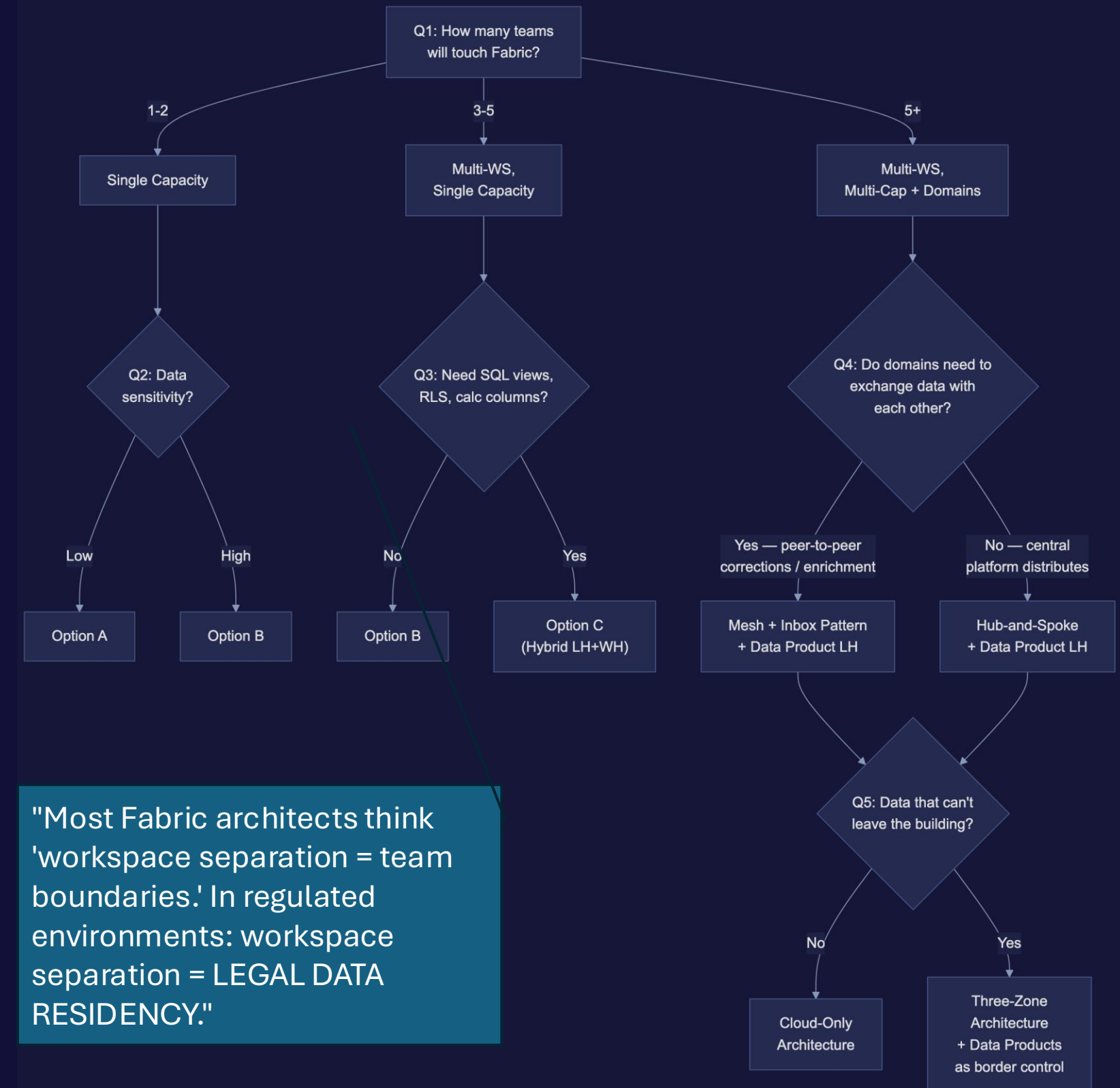
# Questions 1–3: Teams, Sensitivity, Gold Layer

- "How many teams will touch Fabric?" → 1-2: single capacity. 3-5: multi-WS multi-cap. 5+: add domains. → Prevents Decision 1
- "What breaks if the wrong person sees this data?" → Nothing much: WS-level security. Regulator/audit/lawsuit: separate WS + RLS + Purview.
- "Does Gold need SQL views, RLS, or calculated columns?" → Yes: Warehouse + Direct Lake on physical tables. No: Lakehouse Gold works. → Directly prevents Trap 1



# Questions 4–5: Sharing Model + Zone Architecture

- Key insight: producing data alone does NOT require Mesh — all domains produce via Data Product LH. Mesh is only needed when domains need to send corrections/enrichments directly to each other.
- "Do you have data that can't leave the building?" → No: Fabric-only architecture. Yes: Zone architecture - Protected Zone Hybrid Zone (Data Gateway), Open Zone (Full Fabric). Data Products as zone interfaces.



# Three Key Takeaways

- Architecture decisions compound. What feels simple in Week 1 becomes your most expensive refactoring in Month 6. Plan topology before you load data.
- The traps that matter most are invisible. Direct Lake fallback has no error. Deployment binding has no warning. Throttling cascades have no alert. Test at production scale or don't test at all.
- Shortcuts aren't a storage optimization – they're your biggest governance asset. The data owner always retains control. If you're copying data between teams, you're creating governance debt.

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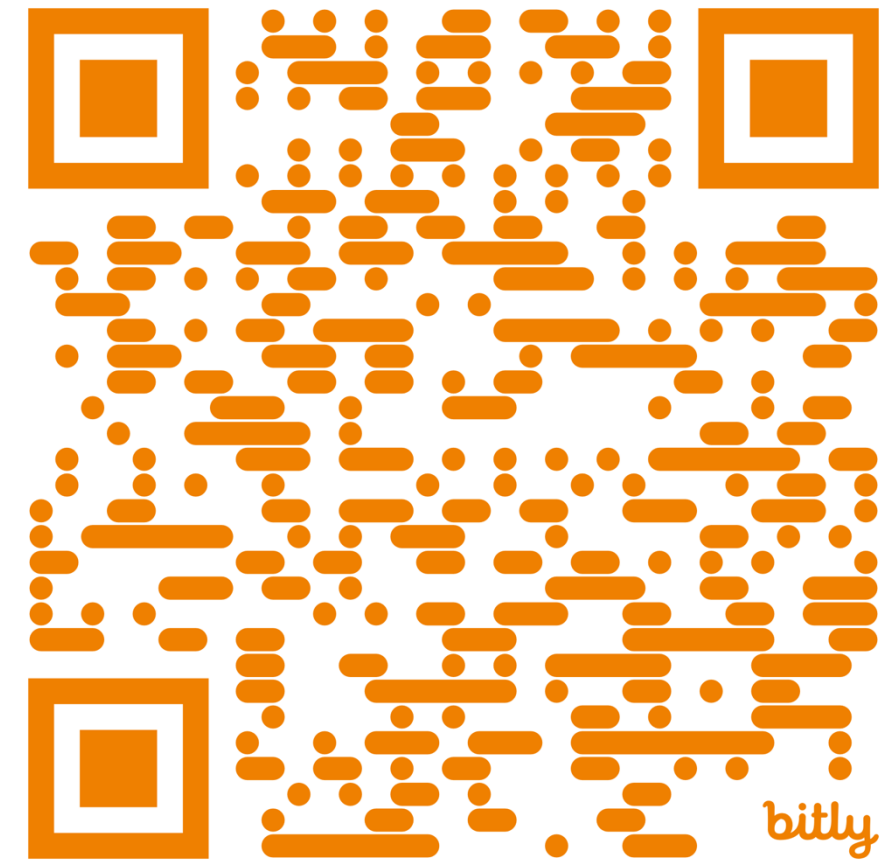
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3 Shortcuts aren't a storage optimization – they're your biggest governance asset. The data owner always retains control. If you're copying data between teams, you're creating governance debt.

# Resources

All MS Learn links from this session  
Decision Framework (PDF)  
Fabric Friday YouTube Series  
Architecture Training

Scan the QR code or find me after the session.



Sound off.  
The mic is all yours.  
Influence the product roadmap.

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