Business Functions & Branching Failures

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Relay: Below is a **complete, consolidated list of business functions we explicitly discussed** (and a few that were implicitly covered by the same mechanics) that suffer from **branching problems**—i.e., places where 2D systems collapse because they try to flatten roots, time, authority, and constraints.

This list is written in **Relay terms**: root → branches → projections → failure mode.

1) Bills of Materials (BOM)

Branching reality

- One product → multiple revisions
- Engineering BOM ≠ Manufacturing BOM ≠ Service BOM
- Regional substitutions
- Supplier-specific variants
- Time-based validity

2D failure

- "Final_BOM_v7.xlsx"
- Silent overrides
- No traceable causality
- No reconciliation between versions

Relay issue

- BOM is a filament, not a file
- Branches must reconcile or remain visible forks

2) Payment Terms

Branching reality

- Net 30 / 45 / 60
- Region-specific terms
- Vendor-specific exceptions
- One-off negotiated deviations
- Retroactive changes

2D failure

- Terms live in contracts, SAP, emails, memory

- Invoices don't match expectations

- Finance vs procurement mismatch

Relay issue

- Payment terms are conditional projections from a root agreement

- Branches must show *why* they diverged

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3) Products → Customers

Branching reality

- Same product sold to:

  o different customers

  o different regions

  o different regulatory regimes

- Custom SKUs

- Feature flags

- Packaging differences

- Contractual constraints

2D failure

- Product lists assume "one product"

- Customizations tracked ad hoc

- Support and delivery drift

Relay issue

- Product is a root

- Customer-specific delivery is a branch

- No collapsing allowed

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4) Bidding / Sourcing (3× quotes, tenders)

Branching reality

- Category-specific rules

- Threshold-based bidding

- Accumulated spend triggers

- Exceptions

- Renewals over time

2D failure

- Quotes in email

- Decisions undocumented

- Accumulation invisible

- Audits fail retroactively

Relay issue

- Each bid cycle is a branch off a sourcing filament

- Accumulation must be continuous, not annual snapshots

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5) Procurement (Direct vs Indirect)

Branching reality

- Direct procurement (production-critical)

- Indirect procurement (site, services, MRO)

- Different owners

- Different thresholds

- Different approval paths

2D failure

- One global SOP pretending all paths are equal

- Site managers improvising

- Finance catching issues too late

Relay issue

- Procurement categories are separate basins

- Global intent, local branches

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6) Contracts & Legal Agreements

Branching reality

- Master agreement

- Local addenda

- Amendments

- Side letters

- Regulatory overlays

2D failure

- "Latest version" ambiguity

- Old clauses still enforced accidentally

- Legal vs operational reality diverges

Relay issue

- Contract is a root filament

- Every amendment is a branch with a scar

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7) Approvals & Authority

Branching reality

- Delegated authority

- Temporary approvals

- Emergency overrides

- Regional authority limits

- Time-based expiry

2D failure

- Authority implied by role

- Old permissions linger

- No decay

- No replay

Relay issue

- Authority is a time-bounded vector

- Branches must expire or reconcile

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8) Change Management

Branching reality

- Proposed change

- Approved change

- Implemented change

- Rolled-back change

- Parallel experiments

2D failure

- Change logs out of sync

- Production ≠ documentation

- "Who approved this?" unanswered

Relay issue

- Change is a filament with state transitions

- No silent jumps allowed

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9) Configuration & Feature Flags

Branching reality

- Environment-specific config

- Customer-specific flags

- Temporary toggles

- A/B tests

- Emergency switches

2D failure

- Flags forgotten

- Config drift

- Impossible debugging

Relay issue

- Config is a branching state machine

- Every toggle has history and expiry

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10) Financial Accruals & Forecasting

Branching reality

- Forecast vs actual

- Updated assumptions

- Revised outlooks

- Scenario planning

2D failure

- Forecasts overwritten

- No memory of assumptions

- Blame instead of learning

Relay issue

- Forecasts are outward branches

- Actuals are downward reconciliation

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11) Quality Control & Deviations

Branching reality

- Standard process

- Deviation approved

- Temporary workaround

- Permanent change

2D failure

- Deviations normalized

- Root cause lost

- Repeated defects

Relay issue

- Deviations are explicit branches

- Must reconcile or be closed

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12) Incident Management

Branching reality

- Incident detected

- Mitigation path A

- Mitigation path B

- Postmortem outcomes

2D failure

- Timeline confusion

- Competing narratives
- Lessons not carried forward

Relay issue

- Incidents are time-boxed filaments
- Multiple response branches allowed

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13) Education & Training

Branching reality

- Learner at different levels
- Different tracks
- Peer teaching
- Certification decay

2D failure

- One-size-fits-all training
- Knowledge siloed
- Experts burn out

Relay issue

- Education is a rotating filament
- Learners become teachers
- Branches converge via assessment

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14) Governance & Policy

Branching reality

- Proposed policy
- Adopted policy
- Regional interpretation
- Exceptions
- Sunset clauses

2D failure

- Policy drift
- Old rules enforced

- New rules ignored

Relay issue

- Policy is a root
- Enforcement is branch-specific

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15) IT Systems & Integrations

Branching reality

- Same data in:
  - SAP
  - CRM
  - CMS
  - Spreadsheets
- Partial sync
- Manual corrections

2D failure

- "System of record" illusion
- No reconciliation
- Silent inconsistency

Relay issue

- Systems are projections
- Truth lives in filaments, not tools

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16) Organizational Structure

Branching reality

- Matrix reporting
- Temporary roles
- Project teams
- Regional overlays

2D failure

- Org charts lie
- Informal power dominates

- No accountability trail

Relay issue

- Roles are time-bounded assignments
- Rotation is mandatory

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17) Communication (Email / Threads / Decisions)

Branching reality

- One topic → many replies
- Context shifts
- Decisions buried
- Old threads resurrected

2D failure

- No causality
- No ownership
- No replay

Relay issue

- Threads are decision containers
- Each branch must close or fork

Meta-Observation (Important)

Every function above fails for the **same reason**:

They are branching systems forced into 2D representations.

Relay doesn't add process.
It **restores the dimensionality that was already there**.

One-Line Summary (Lock This)

Anywhere intent, reality, and authority can diverge over time, you have a branching problem—and Relay is the only class of system designed to handle that without collapse.