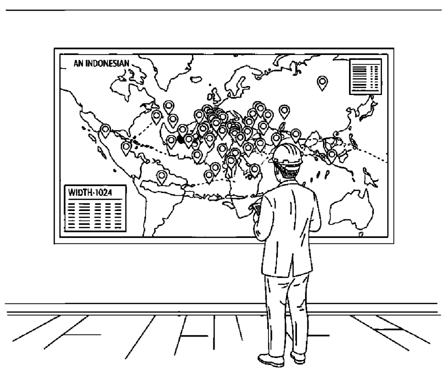
NICHE-SEARCH

WORKSHEET 4 OF 9

Full Supplier Redundancy Mapping

A quarterly or semi-annual deep audit. Not a weekly task. Run it when vendor composition changes significantly or before entering a new fiscal year.



Complementary worksheet for
Supply Chain Risk Mitigation
by Ibrahim Anwar

SECTION 1

What This Is For

A full supplier redundancy map goes beyond the weekly scan. Where the scan tracks this week's concentration, this audit examines the complete vendor composition across all critical components, assigns each to the four-quadrant framework, and calculates the actual cost-benefit comparison for every Quadrant A item still without a verified alternative. The result is a ranked action list, not a general impression.

This worksheet is triggered by time (quarterly or semi-annual cadence) or by events: a significant procurement change, a new product launch, a vendor changing ownership, or preparation for a fiscal year audit or investor review. Fan, Zhou, and Ye (2025) found that supplier concentration is a dynamic condition — without periodic audit, businesses experience rising concentration without noticing it, because small vendors exit the market one by one while the dominant vendor grows. This audit catches that drift before it becomes irreversible.

SECTION 2

Benefits

What you get when you actually run this worksheet on a real situation:

- Produces a complete, ranked list of Quadrant A items with the financial case for diversification already calculated per item.
- Identifies components that have moved from lower-risk quadrants to Quadrant A since the last audit — concentration that increased quietly, without a visible event.
- Provides the exact format required for supply chain risk disclosure in IPO prospectuses and investor due diligence (OJK No. 29/POJK.04/2016).
- Creates the annual baseline that the weekly scan references week over week.
- Surfaces components where a verified alternative exists but the split ratio has drifted toward dangerous concentration through normal procurement volume growth.

SECTION 3

Framework To Use

— Priority Score Matrix

Rank every Quadrant A item by two axes: daily financial exposure if this vendor fails, and estimated days to activate a verified alternative. High exposure plus long switch time = top priority. Resolve in that order.

	Short Switch Time (<7 days)	**Long Switch Time (7–30 days)**	**Very Long Switch Time (>30 days)**
High Daily Exposure (>$500/day)	Priority 2: verify alternative this quarter	Priority 1: act immediately	Priority 1: act immediately — no delay
Medium Exposure ($100–500/day)	Priority 3: monitor; one verified alt sufficient	Priority 2: diversify within 6 months	Priority 1: begin diversification now
Low Exposure (<$100/day)	Priority 4: annual check only	Priority 3: monitor; no urgency	Priority 2: note and review next cycle

SECTION 4

How To Use

Follow these steps in order. Each one builds on the previous.

1. Pull all purchase invoices for the last 3 months. List every component, raw material, packaging item, and production consumable that was purchased. Do not omit low-value items whose absence can halt production.
2. For each item: calculate total purchase value across the 3-month period, then break down by vendor. Calculate each vendor's share of total purchases for that item.
3. Assign each high-share vendor to a quadrant using the definitions: A = share above 50% with no verified alternative; B = share above 50% with an active verified alternative; C = share below 30% with no verified alternative; D = share below 30% with an active alternative.
4. For each Quadrant A item: estimate the daily financial exposure using the disruption cost formula from Chapter 3 — daily contribution margin loss plus staff idle cost per day.
5. For each Quadrant A item: estimate the vendor switch time — how long would it take from today to receive a first delivery from an alternative vendor who has never fulfilled an order for this item?
6. Calculate Priority Score by combining exposure and switch time. Highest exposure with longest switch time = Priority 1.
7. For the top three Quadrant A items by priority: calculate the annual cost of maintaining a verified alternative at 10% of current volume. Compare to the minimum three-week disruption cost (daily exposure times 15 working days plus staff idle cost). Document the comparison.
8. Compare the current audit to the previous quarter's map. List components that changed quadrant. Those that moved to Quadrant A without any action are the hidden concentration growth described by Fan, Zhou, and Ye (2025).

SECTION 5

Example Use

A mid-size cosmetics manufacturer runs its quarterly full redundancy audit after a fiscal quarter in which two new product lines launched, increasing procurement volume by 35%. The owner suspects some component concentrations have shifted.

The audit covers 18 items. Three months of invoices are sorted by component and vendor. Results:

Component A (specialty emulsifier): 82% from Vendor X, no verified alternative. Daily exposure: $340. Switch time estimate: 21 days (import lead time from alternative manufacturer). Priority 1.

Component B (amber glass bottles): 67% from Vendor Y, one verified alternative (received an order 8 months ago, fulfilled to spec). Daily exposure: $190. Switch time: 5 days. Priority 3 — alternative exists and is fast; keep active with a small order this quarter.

Component C (carmine pigment): 100% from single importer, no alternative contacted. Daily exposure: $620. Switch time: unknown (never researched). Priority 1 — and the switch time needs to be determined this week, not estimated.

The annual cost of maintaining a carmine pigment alternative at 10% of volume, assuming 12% higher price from a smaller vendor: $1,440. The minimum three-week disruption cost at $620/day: $9,300. The math decides the question.

The audit produces three Priority 1 items with the disruption-versus-diversification comparison documented. The action list has been converted from abstract concern into specific numbers with a clear ranking.

SECTION 6

The Worksheet

Tear this out, copy it onto a fresh sheet, or fill it in directly.

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COMPONENT	PRIMARY VENDOR	PRIMARY SHARE (%)	VERIFIED ALT #1	ALT #1 LAST ORDER DATE	VERIFIED ALT #2 (IF ANY)	QUADRANT (A/B/C/D)	PRIORITY RANK

SECTION 6 (CONTINUED)

Reflection Prompts

After filling in the worksheet on the previous page, work through these.

1. For every Quadrant A item: calculate annual cost of maintaining one verified alternative at 10% of current volume. Then calculate minimum three-week disruption cost for the same item (daily contribution margin × 15 working days + staff idle cost). If disruption cost is larger than annual alternative-vendor premium, the math has decided the question — the alternative vendor is cheaper.

2. Compare this table to the one from the previous quarter. Which items moved from Quadrant B or C into Quadrant A? Concentration that rises without notice is the pattern described in Chapter 10. Growth in one vendor's share is normal; leaving it unmeasured is what turns efficiency into vulnerability.

SECTION 7

Tips and Traps

TIPS	TRAPS
• Do not limit the item list to components with the highest rupiah or USD purchase value. The most dangerous Quadrant A items are often specialty components with low purchase value but no short-term substitute — a specific dye, a thread grade, a seal size available from one importer. • For every verified alternative in column 4 or 6: confirm the last order date is within the last 12 months. An alternative vendor with no order in 14 months is effectively inactive and should be re-verified before being counted as a mitigation. • Use the Priority Score to decide where to spend limited diversification budget this quarter. Priority 1 items get action. Priority 3 items get noted and reviewed next quarter. Do not try to resolve all quadrant A items simultaneously. • Keep the previous quarter's completed audit. The comparison of quadrant assignments across quarters is more informative than any single audit in isolation.	• Assigning Quadrant B to a component where both the primary and secondary vendor share the same tier-2 source. Two vendor names with one supply source is still Quadrant A for practical purposes. Check tier-2 overlap before assigning B. • Treating the audit as a one-person task. The person who does procurement knows the vendors. The person who does production knows which components are truly irreplaceable. Both perspectives are needed to assign exposure and switch-time estimates accurately. • Filing the completed audit without distributing it. The operations manager and the owner both need to have seen the Priority 1 list before the next week starts. The audit is only useful if the people who can act on it have seen it. • Completing the audit but not updating the weekly scan's baseline. The full audit should reset which components are tracked in the weekly scan based on current quadrant assignments.

SECTION 8

Appendixes

Appendix A — Disruption Cost vs. Diversification Premium: Worked Comparison

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For any Quadrant A item, calculate:

Step 1 — Three-week disruption cost:
  Daily exposure = daily contribution margin + daily staff idle cost
  Three-week cost = daily exposure × 15 working days
  (Add active customer late-delivery penalties if applicable)

Step 2 — Annual diversification premium:
  Monthly procurement value of the component × 10% (secondary vendor volume)
  × price premium of secondary vendor over primary (typically 8–15%)
  × 12 months

Step 3 — Compare:
  If three-week disruption cost > annual premium: diversification is cheaper.
  This comparison should hold true for virtually every Quadrant A item with
  daily exposure above $100 and a price premium below 20%.

Example:
  Daily exposure:           $500
  Three-week cost:          $7,500
  Monthly procurement:      $20,000
  Secondary volume at 10%:  $2,000/month
  Price premium 10%:        $200/month = $2,400/year
  Comparison:               $7,500 > $2,400. Diversification is cheaper.
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Appendix B — Vendor Quadrant Change Log

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Track quadrant movement across audits in this format:

Component | Q1 Quadrant | Q2 Quadrant | Change | Reason | Action Taken
-----------------------------------------------------------------
[fill per audit cycle]

Items that moved TO Quadrant A this quarter:
  These are the concentration growth items. Each needs a Priority Score
  assignment and a diversification action in the next 60 days.

Items that moved OUT of Quadrant A this quarter:
  These are proof that diversification actions are working. Document
  which action caused the change (first verified alternative order, etc.)
  so the method can be replicated for other items.
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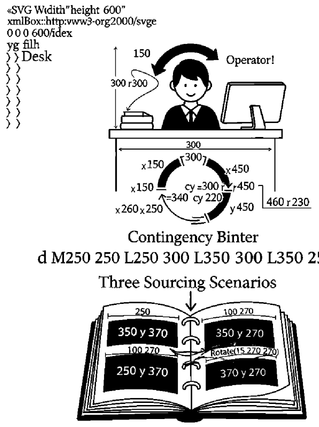

WHERE THIS WORKSHEET COMES FROM

Supply Chain Risk Mitigation

Disruptions Cannot Always Be Prevented, But Their Impact Can Be Limited

by Ibrahim Anwar

This worksheet is one of nine in the *Supply Chain Risk Mitigation* companion worksheet pack. The full pack is grouped into three categories: high-volume worksheets you can run weekly, niche-search worksheets for rare but high-value situations, and specific-case worksheets that walk you through a single concrete scenario.

Every framework, decision filter, and figure used in these worksheets is drawn from the chapters of the source book. The book sets the diagnosis, the worksheets give you the form to act on it.

Available on Google Play Books

play.google.com/store/books

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