



# Unit 6 Structured Analytic Techniques

Diagnostic Techniques

# MASSIVE OPEN ONLINE COURSE (MOOC)

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ANALYST - A New Advanced Level for Your Specialised Training

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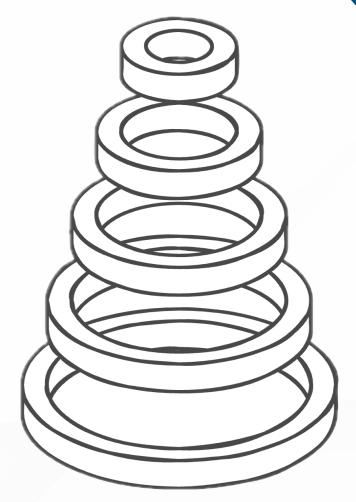






#### Learning objectives

- Understand the purpose of diagnostic techniques in the intelligence cycle and their role in structuring analysis.
- Learn how to apply Root Cause Analysis (RCA), including the 5 Whys and fishbone diagram.
- Use SWOT Analysis to connect internal capabilities with external threats and opportunities.
- Conduct a Key Assumptions Check (KAC) to identify and assess assumptions for impact and confidence.
- Perform a Quality-of-Information Check (QIC) to evaluate source reliability and evidence credibility.
- Integrate diagnostic techniques into a sequential workflow for stronger, evidence-based insights.
- Analyze real-world cases to trace how diagnostics uncover root issues and inform actionable strategies.
- Practice diagnostic tools in team exercises to identify root causes, critical assumptions, and strategic recommendations.





















## Why diagnostics?

# Diagnosing Intelligence Problems

# Before we forecast possible futures or brainstorm creative alternat

Before we forecast possible futures or brainstorm creative alternatives, we must first ensure that we truly understand the problem at hand. Without a solid grasp of the current situation, even the most imaginative or well-modeled projections can rest on shaky foundations.

Diagnostic techniques play a crucial role in this early phase by offering a structured "health check" on the quality of evidence, the soundness of logic, and the validity of assumptions. They help analysts slow down just enough to spot flaws, gaps, or contradictions that might otherwise go unnoticed under pressure.

In corporate environments, this disciplined approach translates into more confident and lowerrisk decisions. By taking the time to validate inputs and thinking before acting, businesses can move faster, with fewer costly missteps and more targeted use of resources.

Diagnosis first, prediction second.



















## Family view



#### **Diagnostic Technique Family**

The diagnostic family of Structured Analytic Techniques focuses on testing ideas rather than creating them. These methods are designed to critically examine the foundations of analysis before any conclusions are drawn or solutions proposed.

Key techniques in this family include Root Cause Analysis, SWOT Analysis, the Key Assumptions Check, and the Quality-of-Information Check. Each one serves as a structured lens for identifying what might be missing, unclear, or flawed, whether it's a gap in the evidence, an inconsistent argument, or an unstated assumption.

By imposing this analytical discipline early in the process, diagnostic techniques help analysts uncover hidden drivers and avoid premature conclusions. They ensure that what follows (whether it's forecasting, strategy, or scenario planning) is built on a stable and transparent foundation.

Diagnostics turn raw findings into validated insight.



















#### RCA intro



# Noot Cause Analysis (RCA)

Root Cause Analysis (RCA) is designed to uncover the underlying reason an event occurred, not just the immediate symptom. It shifts the focus from reacting to visible problems to understanding what actually caused them in the first place.

By asking systematic "Why?" questions analysts can trace issues back to their origin. This prevents organizations from applying quick fixes or "band-aid" solutions that may temporarily relieve the symptom but leave the root problem unresolved.

In business settings, two widely used RCA tools are the "5 Whys" method, which drills down into causal chains through simple questioning, and the Ishikawa or fishbone diagram, which visually maps out possible contributing factors across categories like people, processes, etc. These techniques bring clarity to complex problems and support cost-effective solutions.

Fix the root, not the ripple.



















#### RCA steps



#### 5 Whys & Fishbone Steps

- State the Problem Clearly
  - Define the issue in precise, unambiguous terms to ensure everyone is analyzing the same challenge.
- Ask "Why?" Repeatedly
  Use the "5 Whys" method to dig beneath the surface, uncovering deeper causes with each answer.
- Map Causes Visually
  - Organize responses on a fishbone (Ishikawa) diagram, grouping them under categories like People, Process, Technology, Environment, and Measurement.
- Test Each Causal Chain
  - Evaluate the logic and supporting evidence for each branch to validate which causes are real and which are assumptions.
- Identify the Addressable Root Cause
  - Determine which root cause can realistically be acted upon, enabling targeted and lasting solutions.

Evidence plus iteration reveals the deepest lever.



















#### RCA example



#### 🕌 RCA Example: Factory Delays

Structured Analytic Techniques (SATs) are documented, repeatable methods that help reduce cognitive bias and add structure and transparency to the analytical process. They support clearer thinking and more defensible judgments, especially under conditions of uncertainty.

There are more than 50 recognized SATs, grouped into four main families: Basic, Diagnostic, Contrarian, and Imaginative. Each category responds to different analytical needs—from organizing fragmented evidence, to testing assumptions, challenging prevailing views, or imagining alternative outcomes.

SATs don't replace experience or expertise, but they provide a framework that helps analysts think more critically and communicate more effectively.

The right SAT turns a vague hunch into a defensible assessment.



















#### **SWOT** intro



#### **SWOT Analysis Essentials**

SWOT Analysis maps an organization's Strengths, Weaknesses, Opportunities, and Threats using a simple but powerful 2×2 grid. It brings together internal diagnostics, what the organization does well (strengths) and where it struggles (weaknesses), with an external scan of emerging trends, risks, and openings in the environment (opportunities and threats).

This dual perspective helps analysts connect present capabilities with future positioning. It highlights how internal assets can be leveraged to seize opportunities or defend against threats, and where vulnerabilities might require attention to avoid strategic setbacks.

By forcing a structured reflection on both the inside and outside view, SWOT creates a practical framework for aligning intelligence with real business strategy.

SWOT turns environmental scanning into a single strategic snapshot.



















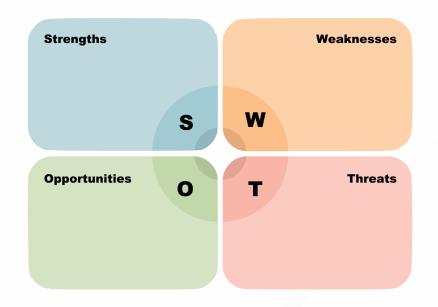
#### **SWOT** build



#### **Building a High-Value SWOT**

Gather evidence, not opinions, for each quadrant; rank factors by impact and controllability; look for S-O matches, W-T dangers, and S-T plays that convert risk into advantage.

Finish with 2–3 strategic options backed by the grid.



A SWOT without prioritization is just a list.



















#### SWOT exercise



#### **Exercise: New Market Entry SWOT**

In a practical SWOT exercise, teams assess their company's digital strengths against a backdrop of emerging regional threats. The goal is not just to fill out the grid, but to generate actionable insights from the analysis.

The final deliverable is a concise strategy that does three things at once: it leverages a core internal strength, targets one of the most promising external opportunities, and addresses a critical internal weakness that could hinder execution.

This focused output ensures that the SWOT analysis leads directly to strategic action, not just abstract diagnosis. It aligns internal capabilities with external dynamics, where strategy lives.

Applying the grid live reveals hidden internal disagreements.



















#### **KAC** intro



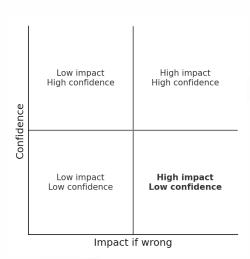
#### Key Assumptions Check (KAC)

The Key Assumptions Check (KAC) systematically lists all the assumptions that underpin an assessment or judgment. Each assumption is then rated based on two factors: how confident we are that it's true, and how much it would affect the outcome if it turns out to be wrong.

This structured review helps analysts identify which assumptions are most vulnerable (and most dangerous).

High-impact, low-confidence assumptions are flagged for immediate attention. They may require targeted collection to verify, or contingency planning to prepare for alternative scenarios.

By surfacing and stress-testing these hidden foundations, KAC reduces the risk of surprise and strengthens the overall integrity of the analysis.



Expose brittle beliefs before they snap.



















#### **KAC** matrix



#### Scoring the Assumptions Matrix

To visualize the results of a Key Assumptions Check, analysts can plot each assumption on a twoaxis chart: validity (or confidence) on one axis, and impact if wrong on the other. This creates a simple quadrant framework that quickly reveals which assumptions require the most urgent attention.

Assumptions in the high-impact/low-validity quadrant are the most critical, they may need immediate evidence collection, alternative scenario planning, or clear communication to stakeholders. Others, while more stable or less consequential, can be monitored or noted without disrupting the analysis.

This quadrant view transforms a static list into a strategic map, helping analysts prioritize their next steps and reduce analytic risk.

Visual scoring focuses limited resources on the riskiest blind spots.



















#### QIC Intro

# **✓** Quality-of-Information Check

In a Quality-of-Information Check, each data point is rated along two dimensions: Source Reliability (graded A to E) and Information Credibility (scored 1 to 5). This dual rating helps analysts assess not just what is being said, but who is saying it—and how trustworthy it all is.

When these scores are cross-tabulated, patterns begin to emerge. High-reliability, high-credibility entries become the pillars of the assessment, while low-scoring items are flagged as weaker links—placeholders that may need to be confirmed, replaced, or downgraded in influence.

This structured approach helps anchor judgments in strong evidence, while making uncertainty visible and manageable.

Garbage in still equals garbage out. Check it.



















#### Workflow



## **Diagnostic Workflow**

A typical diagnostic workflow follows a logical, reinforcing sequence. It begins with a Quality-of-Information Check to evaluate the reliability and credibility of the available evidence. Once the evidence base is graded, the Key Assumptions Check (KAC) helps surface uncertainties and hidden beliefs that could distort analysis.

Next, techniques like Root Cause Analysis or SWOT are applied to structure the problem more clearly, revealing underlying drivers, strategic tensions, or missed opportunities. The insights gained from these steps often expose information gaps—prompting a targeted return to the collection phase to fill in the blanks.

Each technique builds on the previous one, creating a loop that progressively tightens the analytic process. The result is deeper insight, stronger logic, and greater confidence in the final judgment.

Sequencing diagnostics compounds their power.



















#### Case overview



A consumer-electronics firm was struggling with recurring stock-outs, impacting both revenue and customer satisfaction. To understand the issue, the team applied a series of diagnostic techniques.

A Key Assumptions Check (KAC) revealed that the company had overestimated its visibility into tier-2 suppliers, creating blind spots in the supply chain. A SWOT analysis flagged a critical Threat: over-reliance on a single logistics hub, making operations vulnerable to regional disruptions. Finally, Root Cause Analysis (RCA) traced the problem back to an outdated demand-planning software system that couldn't handle real-time fluctuations or new product cycles.

Together, these diagnostics painted a clear picture: the stock-outs weren't random, they were symptoms of deeper, structural weaknesses. The findings gave leadership a focused roadmap for action: upgrade forecasting tools, diversify logistics, and invest in supply-chain transparency.

Multiple diagnostics painted a full risk picture, not isolated symptoms.



















#### Case results



#### Outcomes & Opportunities

In response to the diagnostic findings, the firm implemented several targeted actions. It began dual-sourcing critical components to reduce dependency on single suppliers, and rolled out realtime dashboards to improve visibility into tier-2 supply chain performance. Additionally, it renegotiated supplier contracts to include shared access to demand data, fostering better coordination and responsiveness.

These interventions delivered measurable results: a 25% reduction in back-orders within two quarters, improved inventory stability, and increased confidence across operations. Beyond efficiency gains, the company also repositioned its reliability as a market differentiator marketing its "resilient supply" as a value proposition to customers concerned with product availability and delivery assurance.

Diagnostics convert risk mitigation into competitive edge.



















#### Team exercise

# **%** Workshop: Diagnose Your Process

Participants choose a live corporate pain-point, apply QIC + KAC, then either RCA or SWOT. They present one root cause, one critical assumption, and two actionable recommendations to peers for critique.

Hands-on use cements the techniques better than any lecture.



















#### Wrap-up

# **☑** Diagnostic Discipline

Techniques like Root Cause Analysis, SWOT, and Key Assumptions Checks serve as early warning systems for flawed analysis. They ensure that intelligence products are built on solid evidence, clear reasoning, and explicit awareness of uncertainty, before conclusions are drawn or decisions made.

By embedding these diagnostic methods at the start of every project, analysts can detect logic gaps, hidden biases, or weak evidence while the cost of correction is still low. Catching these issues early not only strengthens the final output, but also saves time, resources, and credibility down the line.

In fast-paced business environments, structured validation isn't a luxury. It's a smart investment.

Diagnostics are the safety net that lets advanced analysis fly.













