



Root Cause Analysis

Diagnose the Right Problem, and Find the Right Solution, with Accelerated Root Cause Analysis

Root Cause Analysis by IHS Markit

allows users to identify the root cause of the failure of a product or process by building a cause-effect model. Engineering, R&D, product teams and others use the RCA solution to identify, and thereby correct, the core problems that caused a failure. Companies use RCA by IHS Markit to accelerate problem resolution, enhance productivity, and reduce costs and risks.

In the rush to resolution, engineers often solve only a symptomatic cause – resulting in rework or fault reoccurrence. Given the exposure to risk and revenue impacts, organizations are seeking a faster and better way to solve root problems, rather than symptoms.

Root Cause Analysis (RCA) by IHS Markit combines an automated problem analysis workbench with a next-generation knowledge-discovery engine, bringing a structured and repeatable process that optimally leverages corporate expertise and external worldwide knowledge sources.

By reducing cycle time and increasing first-time yield on problem resolution activities, the RCA solution by IHS Markit enhances staff productivity, improves system availability, accelerates product delivery schedules, and reduces risks, costs and liabilities.

A Structured, Repeatable Process

There are many reasons that people will avoid a formal and systematic problem investigation. Lack of time and an easy-to-follow automated process are common excuses. Even more insidious is the misconception that the cause is already known ("We've seen this problem before"), or that the problem is too simple to merit a structured process. Yet it's this very combination of rushed urgency and assumptions of familiarity that so often results in symptomatic and ineffective solutions.

The problem analysis workbench in Root Cause Analysis by IHS Markit addresses these obstacles by providing a structured environment to guide, optimize and document the analysis process. Using GUI-driven wizards, RCA ensures a thorough identification of events and conditions affecting the underlying problem with a product or process.

By any measure, RCA's root cause analysis capability pays for itself on the first usage – and then continues returning high ROI with each successive incident. Encouraged by initial success, many companies proliferate the software across engineering and product life-cycle teams – confident that even routine daily problem-solving tasks will be completed faster and more comprehensively.

VALUE DELIVERED:

With the integration of methodology and knowledge retrieval, Root Cause Analysis by IHS Markit (RCA) overcomes traditional constraints and shortfalls by providing a roadmap for systematically developing the root cause of the problem.

Comprehensive system thinking is promoted, and subject matter expertise is captured and becomes a permanent, reusable corporate asset.

RCA's root cause models provide a common language for better understanding and communicating the behavior and requirements of complex engineering systems across diverse user constituencies.

Accumulated corporate knowledge and worldwide technical content are leveraged to extend the team's expertise and ensure that insights are not limited to personal experience.

Root Cause Analysis at Work

In the RCA solution by IHS Markit, a "Cause Formulation Guide" prompts users to consider the full spectrum of resources, factors or parameters that may influence or cause a particular event in the causal chain. Automated drawing tools assist in the proper sequencing of the cause-and-effect relationships between discrete events. The outcome is a concise visual diagram that documents component and event interactions while capturing the user's subject matter expertise.

RCA then provides an auto-assist mechanism to help the user identify the minimum causes – the true root issues – that need to be solved to resolve the core problem. As the user moves the cursor over a particular event in the causal diagram, RCA analyzes the resulting path and visually indicates which downstream events will be resolved by eliminating a particular cause. Large, complex diagrams can be quickly analyzed to determine an optimal course of action, overcoming a weakness of manual fishbone diagramming – the difficulty in determining “root” versus symptomatic causes.

A description of each selected root cause is listed and passed to RCA's Solution Manager for subsequent processing. The software issues a warning if the user's selections are insufficient to resolve the original undesirable event. The completed analysis is captured in a persistent document to facilitate collaboration or future audit and review.

The Solution Manager is RCA's central facility for linking root causes and user-defined problems or requirements, with the ideas, concepts, and documents that represent potential solutions. Selecting a problem or root cause from the list brings up a visual representation of its location and overall impact in the cause-effect diagram, and allows review of any linked concepts and retrieval of any related linked documents.

Case Study: The Impact of RCA

The navigation systems division of a global Aerospace & Defense manufacturing adopted RCA as a “best-practice” component of their root cause analysis process.

For example, a critical sensing device was producing a false-positive signal during final acceptance testing. Rapid problem diagnosis was required to keep the contract on schedule. Was it the device itself that was faulty? Or was the error just coming from the testing equipment?

Using IHS RCA the team was able to expedite the process of locating the problem in the testing instrument. The software brought rigor and efficiency to the team's efforts. And the automatically generated documentation was shared with the company's customer – which increased their confidence and understanding.

For more information www.ihsmarkit.com

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