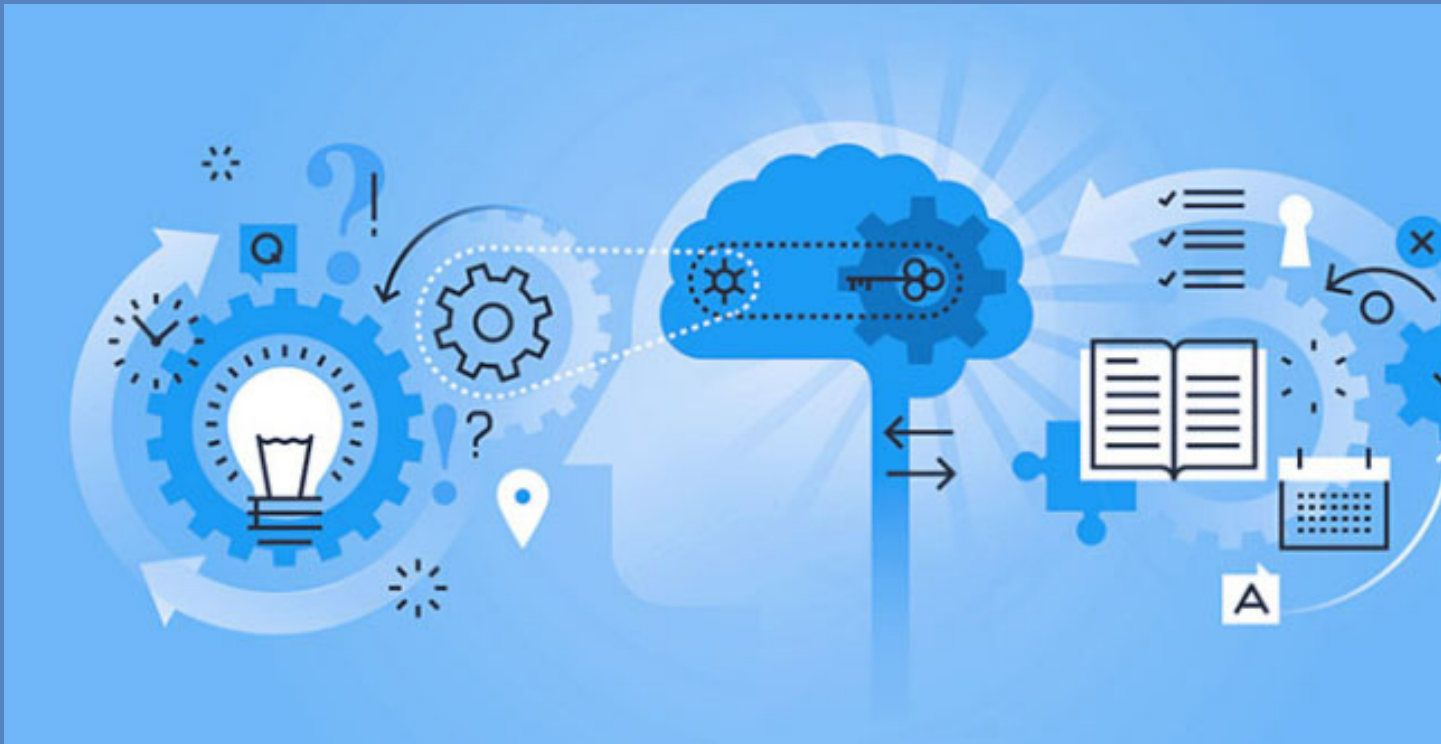


6 Quality Improvement Tools for More Effective ISO 9001 Internal Audits



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Internal Audits: A Foundation for Continued Business Improvement

Your Internal Audit program can be one of the most powerful aspects of your Quality Management System and provides enormous potential for continuous and sustainable business improvement. You can read our latest blog to [Improve Your Business by Leveraging the ISO 9001 Internal Audit Process.](#)

If you want to get the most from your Internal Audit program, it's critical to dig deeper than the superficial symptoms of problems and consider whether there's a more serious issue that needs your attention. If you only identify and fix the symptoms – what you see on the surface – the problem will almost certainly recur and need fixing over and over again.

Equipping your internal auditors with knowledge and skills in a range of quality improvement tools will enable them to identify the underlying causes of issues and subsequently assist auditees in developing more permanent and effective solutions.

Here are six problem identification and analysis techniques that will help your internal auditors maximize value from your Internal Audit program.



Tool 1

5 Whys Technique

The 5 Whys technique is an easy-to-use process for uncovering the root cause of an issue. When you identify a non-conformance during an audit, you can ask “Why?” five times.

Start with the problem and ask why the auditee thinks it occurred.

When they respond, ask to see evidence or data if possible and then ask “Why?” again.

Repeat another three times. Eventually, you reach the “root” of the issue. If you don’t think you’ve gotten to the bottom of the problem, you can keep asking “Why?” until you do.

For example, you identify:

1. A high level of product returns - *Why?*
2. Non-conforming products have been shipped - *Why?*
3. The correct checks haven’t always been carried out before shipping - *Why?*
4. Not all employees are aware of the proper checking process - *Why?*
5. Some of them haven’t had adequate training and induction - *Why?*
6. There is no structured training process, nor checklists or work instructions to underpin the training.

So, rather than writing up a non-conformance report about the absence of checks before shipping, you’ve identified the real issue is the lack of proper training and supporting documentation. This “root” cause is likely to be the source of other problems and non-conformances in the area as well.

Note: Often the absence of records is evidence of the problem. In this case - training/induction records, checklists, and work instructions.





Tool 2

Appreciation (Situational)

This approach, developed by the military is similar to the 5 Whys technique and helps to identify a broader range of implications from a situation, fact, or problem than is immediately obvious. The major difference is that the 5 Whys technique is looking at underlying causes whereas Appreciation is used to get the most information out of a simple fact or statement.



Starting with a fact, you first ask the question "So what?" Why is the situation important or significant and what are the ongoing ramifications?

You then continue asking that question until you have drawn all possible conclusions from it.

For example:

As part of an audit, you discover that critical measuring equipment isn't being calibrated. *So what?*

Critical product components might be the wrong dimensions. *So what?*

Products made from these components could wear more quickly. *So what?*

The numbers of warranty claims and customer complaints will increase. *So what?*

The resources required for rework and replacement of products will escalate. Customers will seek other suppliers. Profits will suffer.



Tool 3

Six Thinking Hats

This technique developed by Edward De Bono is generally used for small group problem-solving. However, by applying the general idea, it can help auditors look at a problem from different perspectives. The idea is to “switch hats” and force yourself to think about an issue from several different viewpoints.



The list of “hats” that may help include:

1. The White Hat: This should be an auditor’s default hat. Think neutral using facts and figures, data and evidence.
2. The Red Hat: Look at the issue from an emotional and intuitive point of view. What is your gut reaction to the problem? Does it differ from the evidence?
3. The Black Hat: Take a cautious approach and play Devil’s advocate to what you are seeing and being told.
4. The Yellow Hat: Purposefully identify the value and positive side of the issue. (Counterbalance your Black Hat.)
5. The Green Hat: Think creatively to identify possibilities, opportunities, fresh alternatives and ideas. Can you contribute something new to the situation?
6. The Blue Hat: The structure behind this technique. A physical or mental checklist to make sure you’ve used the other “hats” properly.



Tool 4

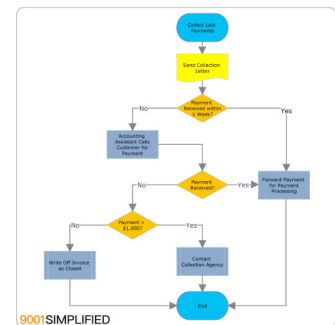
Flowcharts

Flowcharts are an excellent way to break down complex processes and make them easier to understand so you can look at likely sources of problems.

This technique is beneficial when you are trying to understand how the process or situation relates to other areas, inputs and outputs, etc.

Using a flowchart to map a series of events that lead to a result, a problem or an issue, makes it much easier to identify bottlenecks, failure points and areas for improvement.

Asking an auditee to explain how things work, and being able to quickly sketch it out as a diagram, can assist in your understanding of the process and provides immediate feedback as to things they may have missed. When there is more than one auditee, this technique can also help to identify whether everyone thinks the same way about a process.

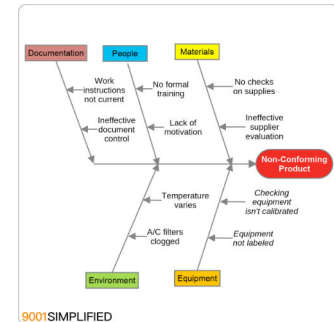




Tool 5

Cause and Effect Diagrams

This technique is sometimes called a Fishbone diagram or Ishikawa diagram. It is used to dig deeper into an issue and identify the many possible causes of a problem or non-conformance so you can prioritize and solve them in order of importance.



To start, identify the problem or non-conformance and place this in a box at one end of a horizontal line (or the head of the fish.)

Next, discuss the potential causes of the problems with the auditee and list them along the spine of the fish. You can group the causes into different categories, e.g., people, materials, equipment, environment, documentation, etc.

You can drill down even further into these causes by adding further layers of “bones.”

Once you have a comprehensive list, identify the most critical or likely causes of the problem and tailor your non-conformances and audit report to address those.

For example, the problem is too many non-conforming products.

You find out:

1. There are no checks on supplies (materials)
2. There is no formal training (people)
3. The checking equipment isn't calibrated (equipment)
4. The temperature in the manufacturing plant varies a lot, impacting on the process (environment)
5. There are no up-to-date work instructions (documentation).

You can then look at each potential cause to identify which ones have the most impact and should be prioritized.



Tool 6

Mind Maps

Mind mapping is a brainstorming technique that works similarly to Cause and Effect diagrams. However, rather than a vertical line and causes radiating out from the spine, a mind map starts with the problem or issue in the center and then each category branches out from there.

A mind map can drill down to whatever level of detail is needed to thoroughly investigate the issue and detail the critical aspects.

To make a mind map of the previous example, you would put “non-conforming product” in the center and have people, materials, equipment, environment, documentation, etc. as the branches. The next layer under documentation might be work instructions, checklists, forms, version control, authorization, etc.

Alternatively, once you’ve identified the “root cause” of the non-conforming products, you could put that in the middle, and each branch could be a potential solution that you could then tease out further.



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