

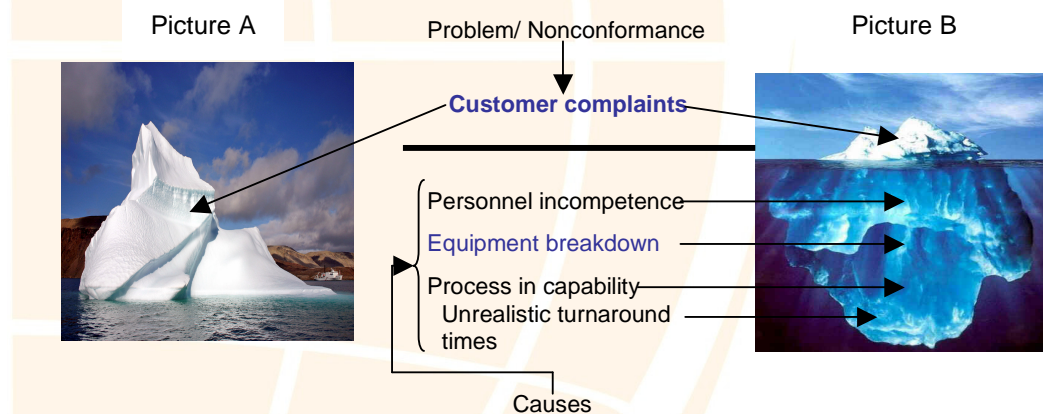
**CORRECTIVE AND PREVENTIVE ACTION**

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On the 9<sup>th</sup> of October 2007 South Africa newspapers and other forms of media published a story on an iceberg claimed to have been seen 35 nautical miles south of St Francis Bay. The crew of the Ntini, a fishing vessel reported seeing an iceberg estimated to be 25 meters in length, 25 meters high at 6pm on Monday. The NSRI could not confirm its existence since this was based on only one sighting. The South African Weather Service Marine also expressed the unlikelihood of an iceberg of that magnitude due to the warm Agulhas current around the east coast. To support this further, the history of iceberg climatology indicates that

there has never been anything like that in the past around that area.

Existing publications indicate that there were few sighting of icebergs in the 1850's near Cape Town. In 2002 a report from a certain ship also reported a meter high iceberg on the west coast of Cape Town. The St Francis sighting was described as a potential navigation hazard and thus a navigation warning had to be sent out. It was also imperative for the sighting to be verified as soon as possible to avoid possibilities of iceberg ship wreckage and sinking.



**Figure 1. Nonconformance and its typical causes.**

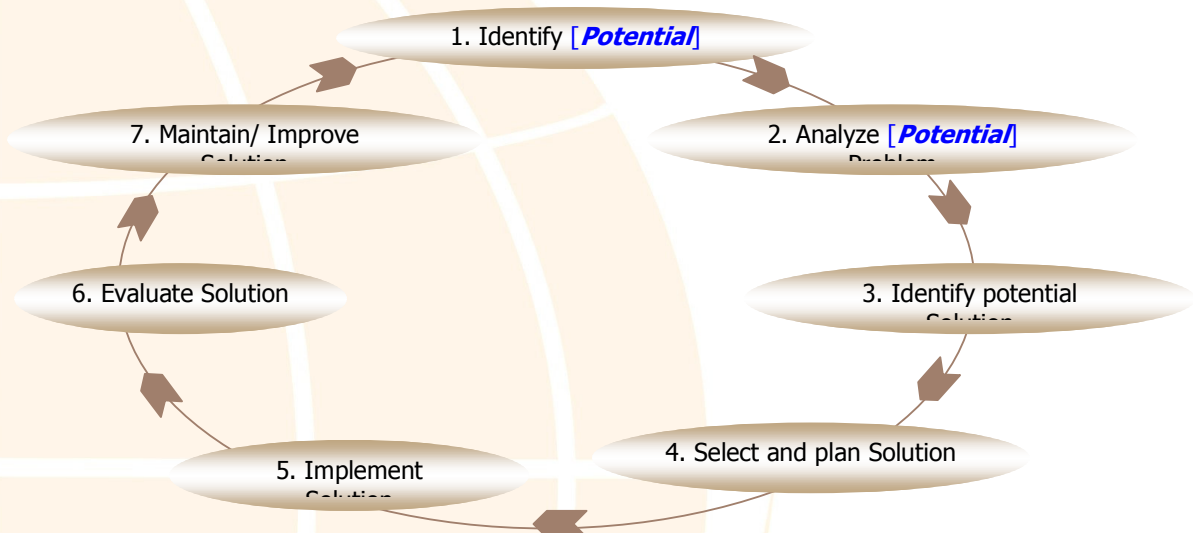
Throughout the voyage of potential and accredited facilities, icebergs are discovered in various forms of complaints, appeals, disputes, system and competency related non-conformances. These icebergs are evident symptoms emanating from underlying causes that are likely to sink the organisation. Figure 1 above illustrates the relationship between the non-conformance (Iceberg) and its causes. What appears to be a small iceberg (Non-conformance) as illustrated on picture A is as a result of a big chunk of ice (causes) below the water

surface as illustrated in Picture B.

The management system as implemented in Certification Bodies (CB's), Laboratories (Labs), Inspection Bodies (IB's), Verification laboratories (VL's) and Verification Agencies (VA's) is supposed to be used as an effective radar to navigate safely around icebergs. The management system is primarily meant to manage the organisations competency to performing its accredited activities (as reflected on the accreditation schedule).As part of the

management system the **Corrective and Preventive Action** process is meant to eliminate existing and potential icebergs by effectively eliminating their root causes. The elimination of these causes should ensure that they do not recur and therefore bring

continual improvement throughout the organisation. From ISO standards requirements and other management publications, the following corrective/preventive steps as illustrated in Figure 2 can be are outlined:



**Figure 2: Corrective and Preventive Action**

1. **Identify the problem:** This step is meant to ensure that the symptom/iceberg is recorded, clearly and accurately described. The principle that states that: **“A problem well stated is a problem half solved”** needs to be applied to ensure effective corrective action. Lack of details on what the problem is turns to lessen the effectiveness of the corrective action. Typical examples of techniques that can be applied in identifying the problem are: Kepner Tregoe, brainstorming and mind-mapping amongst others.

**Example of an Iceberg:** Customer complaint on service turnaround time.

**Food for thought:** Have you experienced a situation whereby the attempt to implement or clear corrective action a few days after the assessment or audit leads to: The assessor or auditor being unable to recall and understand what the intended message in the non-conformance (NC) was due to ambiguity, lack of details or clarity? The NC recipient being unable to recall what the deviation was all about and hence actions required to correct it?

2. **Analyse the problem:** This step of the corrective action helps to identify the real cause to the iceberg. Causes are analysed to establish how they lead to the iceberg/effect/problem/non-conformance. The

magnitude of the Iceberg might seem to be of no significance however the magnitude of the causes below the sea water might be bigger than expected. In order to get rid of the iceberg, the ice below the water surface needs to be destroyed first. Unless the real cause is removed, problems/Non-conformances will continue to resurface throughout the organisation's voyage.

**Examples of causes:** Incompetence on personnel, continued equipment breakdown, unrealistic turnaround time and service-delivery process incapability. **In this case the root cause is continued equipment breakdown.**

**Food for thought:** Why are the same non-conformances and complaints raised repeatedly during assessments and internal audits? What does this indicate about the identification of the root cause?

- 3. Identify potential solutions:** Once the root cause or causes have been identified, matching solutions also need to be identified. In identifying solutions to the problem consideration taken should not be on one solution only. Restrictions to a single solution might lead to the selection of an ineffective solution. A number of possible solutions need to be identified in terms of their efficiency and effectiveness to match the magnitude of the iceberg and its causes.

**Example of solutions:** 1. Buy new equipment- Due to financial constraints this solution might not

be ideal particularly if more than one instrument has to be replaced.  
2. Repair all equipment and introduce a maintenance plan- This might be an ideal and effective solution within the existing constraints. This solution should not stop here but needs to lead to the long term solution of accumulating financial resources and finally upgrade or replace old equipment with new of improved capability.

**Food for thought:** Have you wondered why most of the time is spent in repeated submission of the same proposed corrective actions to SANAS assessors? Have you wondered why most proposed corrective actions are rejected? It could well be that the proposed corrective action does not reflect that the root cause was identified. It could also mean that the corrective action does not match the magnitude of the NC and its root cause.

- 4. Select and plan solution:** The selection of the solution should be based on its effectiveness and efficiency. Although all solutions identified might be able to get rid of the iceberg, the best solution must be selected. What follows after is the detailed and proper planning of the solution to ensure that it is effective in getting rid of the iceberg.

**Example:** Prioritising is the requisite step towards planning. If the plan is to repair all equipment, first priority should be given to those with a record of consistent breakdown. It will be of no advantage to bring all of them to a stop at once as this

might affect the turn-around time and increased number of customer complaints. A plan therefore needs to be developed on how all of them will finally be repaired. Beyond this step a maintenance plan needs to be established to ensure that breakdowns are averted.

**Food for thought:** How often are the corrective actions implemented without proper planning? Lack of planning leads to wasting of time and resources. Proper planning of the corrective action leads to the reduction and saving of unnecessary costs.

- 5. Implement the solution:** The importance of implementing the corrective action as planned cannot be over emphasized. Some of the solutions that would have been best suited for the problem lose their effectiveness due to implementation of steps originally unplanned. This does not however mean that flexibility and improvement should not be allowed in cases whereby better solutions are identified during the implementation phase. New and better solutions identified should also be scrutinized for their short and long term impact, effectiveness and efficiency.

**Example:** Having weighed the possibilities, advantages and disadvantages of the plan, care should be taken in repairing equipment as planned. Deviations from steps and priorities and planned for might lead to failure of the corrective action.

**Food for thought:** How often are solutions planned not executed

accordingly? Could this be the reason to recurrence of NC's?

- 6. Evaluate the effectiveness of the solution:** The evaluation of the solution provides an opportunity to review and learn whether the solution did work. This step is also vital in triggering new steps that lead to further improvement in case the solution did not work as expected. Without the evaluation, it also impossible to identify valuable lessons that can implemented in similar or different areas in preventing potential icebergs.

**Example:** The effectiveness of the corrective action can be measured from monitoring the success in achieving turnaround times promised and agreed with customers. Trends on customer complaints and their nature can be monitored and analysed to establish if there solution has brought improvement. Lessons learnt from the feedback can also be used to prevent similar failures in future should a new product or service be introduced. In this way potential wreckages and sinking can be avoided.

**Food for thought:** How often are corrective actions implemented but not later evaluated for their effectiveness? An organisation that does not learn from its success or failures runs the risk of repeated current and future wreckages that lead to its sinking.

- 7. Maintain/ Improve:** In order to avoid icebergs from resurfacing in future, the effectiveness of the solution needs to be maintained. In

cases whereby the solution is seen to be ineffective, further improvement must be sought. This means going through the corrective action cycle (step 1 to 7) again until an effective and efficient solution is found.

**Example:** The introduction of a maintenance plan could serve the purpose of ensuring that the solution is maintained. A well executed corrective action needs to ensure that the root cause is eliminated and symptoms are not repeated. Due to lessons learnt from the corrective action implemented, a maintenance plan would have to be implemented even for new equipment purchased in future. Periodic monitoring of customer complaints can serve as a good indicator of the solution's effectiveness or need for further improvement.

**Food for thought:** Have you ever considered the monetary quantification of corrective actions that went wrong due to the lack of their maintenance? Can you recall instances whereby a corrective action did not work however no further attempts were done to achieve improvement?

**In conclusion:**

The example given on customer complaints in this article is but one amongst other Icebergs that need effective corrective and preventive action. The corrective action process acts as a funnel that collect all deviations/ problems/ non- conformances and complaints to convert them into solutions that ensure that the management system safely navigates competence of the

organisation. From the St Francis iceberg article the following lesson can be learnt:

- It is possible for the organisation to experience unusual icebergs/ deviations/ non-conformances.
- It is important for the magnitude of the deviation and its impact or risk to be quantified.
- Facts need to be established to ensure accurate identification of the problem.
- Warnings/notification need to be given as soon as possible to ensure that everyone is aware of the deviation and its impact.
- Past history is important in making reference to past non-conformances and lessons learned from previous corrective actions.
- An investigation still needs to be done in line with the seven corrective action steps, even if the deviation seems to have disappeared.

The iceberg analogy indicates that deviations that are seen daily from the management system and competency point of view are just but symptoms of underlying causes. It is therefore important to ensure that the root cause for each non-conformance is identified and eliminated. Similar steps to those taken for corrective action can be taken to address preventive action. The focus on preventive action is to eliminate potential problems as indicated in blue on the Corrective and preventive cycle. (Figure 2). Preventive action should not be as a result of previous corrective action only. It should also be proactive action taken in the absence on a non-conformance. The ultimate goal should be an improved and safe navigation around dangerous icebergs and their causes. This is one of the internal elements that define the outwardly seen success of an organisation.

