

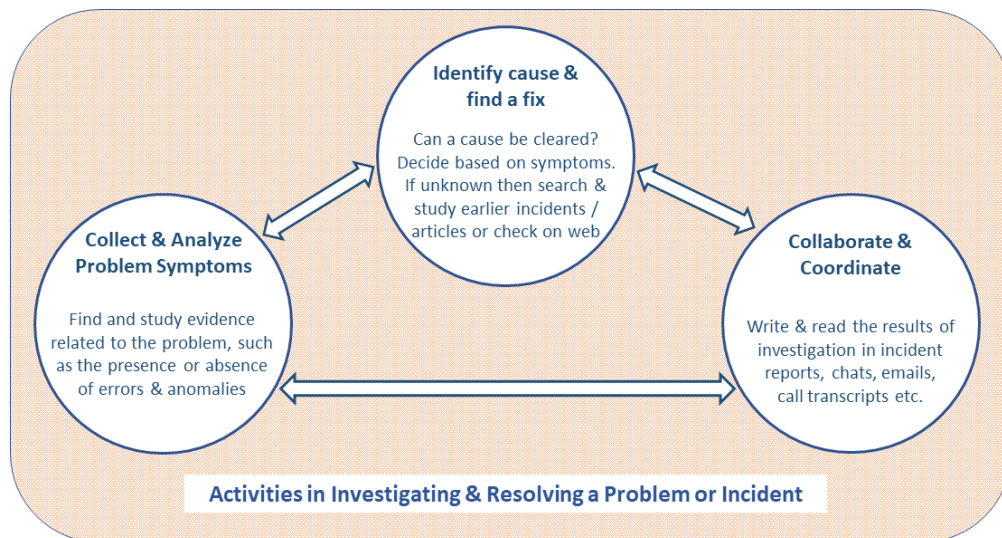
[smartQED](#) is an intelligent Incident Resolution platform, with a visual workspace (*OpsSpace*) for efficient collaborative investigations & ML-powered recommendations (*OpsInsights*) to greatly reduce resolution times.

To analyze the benefits provided by smartQED, we first need to understand how teams investigate problems today, collaborate with others while investigating, and then reuse the problem-solving knowledge in future.

Today: Chats, Incident Reports & Knowledge Articles

Solving complex problems often requires the involvement of multiple subject matter experts (SMEs) from different teams, who might be working from various locations. This scenario is highly likely today as people mostly work from home due to the coronavirus crisis. Given the need to keep IT systems running smoothly 24x7, teams are often also spread across different time zones, making it harder to collaborate and coordinate actions across shift changes and handovers.

How do operations teams solve and track problems today? There are three essential activities, as illustrated in the following figure. Subject matter experts (SMEs) investigating problems may alternate between these activities, switching as needed.



In the first activity, symptoms related to the problem are collected and analyzed by members of the investigation team. These symptoms serve as evidence to feed into the decision-making process in the next step, where SMEs decide which cause or component is responsible for the problem (is it a hacker attack, or misconfiguration of the database) and then propose a fix (either temporary or permanent) for the problem.

Collaborate & coordinate is the third and last activity, in which the observations, decisions and solution for the problem are recorded and tracked by the team using text-based notes in incident tickets, reports, call or web conference transcripts, chats, emails, etc. Additionally, external communication with impacted customers and other stakeholders such as supervisors and managers may require detailed explanations on the current investigation status and strategy. Lessons learned during the investigation may also be documented in knowledge articles and guides for future reference by others.

If a similar problem occurs after some time, often the first step is to search for resolved incidents and knowledge articles to see if the problem was encountered before and learn how it was solved then. This is particularly true for newer members in the team who do not have the experience of skilled senior SMEs.

Pain Points without smartQED – Too Much Text to Read

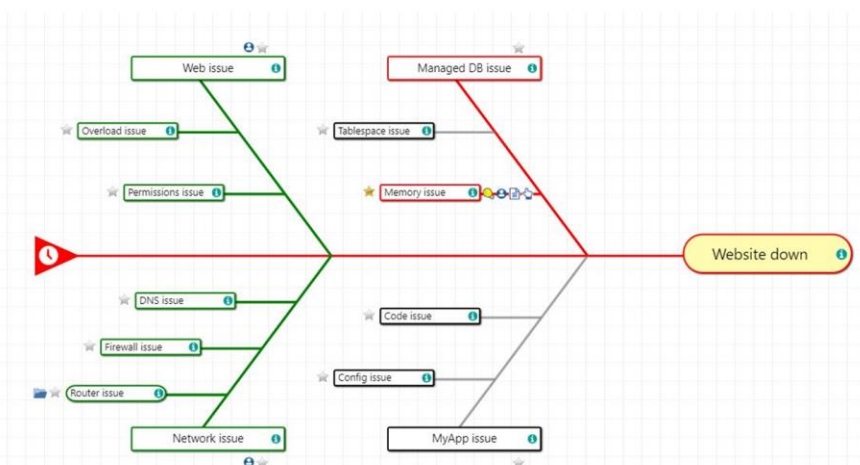
1. **Slow text-based communications:** A major issue is that the investigators need to collaborate and coordinate amongst themselves and with external stakeholders using mostly linear textual notes which can get *very long and convoluted*, making it a burden to communicate with others. Reading and understanding of such linear unstructured text by everyone takes up precious time and results in poor coordination, especially across different shifts and time zones.
2. **Unreliable keyword searches to locate similar prior incidents:** Text-based tools such as ITSM systems, chats and transcripts do not provide any active help to investigators as they solve problems. They are only useful for adding notes in a linear sequence, with the capability of searching by keywords. If a similar problem happens in a few weeks, prior incident reports have to be first searched and located, then read and applied to the current scenario in order to be of any use. However, locating the relevant documents through keyword-based manual text searches is highly *person-dependent*, often varying by the experience and skill level of the SME who is searching for the information.
3. **Inefficient learning from reading of long text in prior incidents:** Assuming a similar incident is found in an earlier report or knowledge article, reusing this knowledge requires another reading of the unstructured text in these documents to understand what symptoms were seen and what actions were taken for the prior problem. This process of knowledge reuse through reading of long text-based information is *highly inefficient* and it can cause confusion and/or substantially delay the problem-solving process.

To summarize, *visualizing knowledge from unstructured text is inefficient and does not scale, especially when you have multiple people collaborating on high-pressure investigations of complex problems.*

A New Approach with smartQED

smartQED *OpsSpace* has a new approach – you can start with a visualization, called an **Investigation Map™**, of the potential causes for a problem. You can create this map on the fly, get it from a pre-defined template, or from earlier solved problems. It provides a well-defined strategy and a structured context for all information related to an investigation. *OpsSpace* merges concurrent updates to the map by multiple users with notifications to all active users. Further, the investigation maps of solved problems are automatically analyzed by our **ML-based Recommendation Engine *OpsInsights*** to provide useful suggestions for future problems, effectively augmenting your team’s problem-solving intelligence.

Using a visual map and automated ML-based recommendations in smartQED greatly reduces the need to write and peruse long text-based incident tickets, reports and knowledge articles, thereby enabling faster and easier resolution of problems.



Sample Investigation Map for a 'Website Down' Problem

Here’s an Investigation Map for a problem “Website down”, with a fishbone-based visualization of the hierarchy of potential causes and information such as fault status, notes, actions, attachments specified “in context” for each cause.

Strategy and status of the investigation are *crystal clear* in a few seconds, with very little reading! Investigations are systematic, with everyone on the same page.

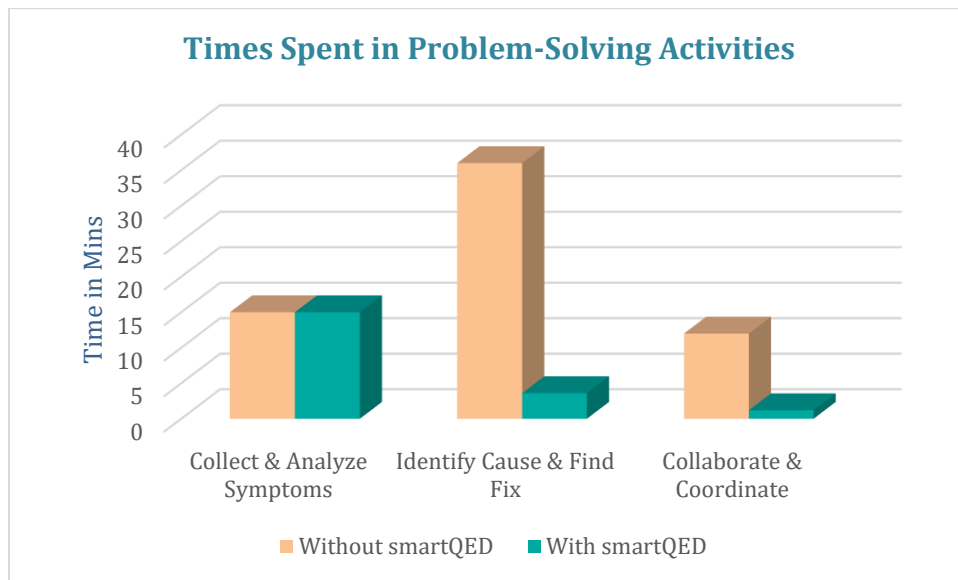
Benefits Realized with smartQED

Organizations can typically realize 50-70% reduction in incident resolution times (MTTR) and 60-80% reduction in team effort while using smartQED to investigate IT issues, depending on the team size, SME skills, and complexity of the problems.

Based on analysis of actual IT problem investigations of moderate complexity, we find that times spent on the 3 types of problem-solving activities are approximately as below:

- Activity 1 – Collect & analyze symptoms: 20 - 25%
- Activity 2 – Identify cause & find a fix: 50 - 60%
- Activity 3 – Collaborate & coordinate with others: 15 - 30%.

The chart below compares the times spent in these activities of two types of scenarios that we analyzed for the incidents – without smartQED and with smartQED (both *OpsSpace* & *OpsInsights*).



Benefits of using smartQED are greater as the team size grows, problems are more complex requiring more people to be involved, and for repeat problems where automated recommendations from *OpsInsights* facilitate much easier knowledge reuse compared to finding and reading earlier incident reports and knowledge articles. These suggestions are most useful for junior members in the team who get significantly up-levelled. Our ML algorithms continuously learn from solved problems to keep improving with time and maximizing the benefits.

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Accelerated Incident Resolution

Collaborate efficiently using Investigation Maps™
Reduce resolution times for problems by half or more
Increase team productivity through automated recommendations