ML-Powered Collaborative Investigation Maps *for*
Accelerated Incident Resolution

WHITE PAPER

Is your **Incident Resolution** process slow and laborious due to inefficient collaboration within and across your teams, or lack of expert knowledge?

Our collaborative Investigation Maps™ can reduce your MTTR by *half or more!*

Visualize potential causes for a problem, add relevant details in the context of a cause, and have everyone on the same page quickly. Eliminate reading of long and convoluted text in incident tickets, greatly speeding up communication.

Best of all, smartQED learns from historical data and provides recommendations for new problems to help solve them faster! Augment your teams' intelligence and accelerate resolutions with smartQED.

Benefits Summary

1. Solve problems faster
2. Track resolution progress easily
3. Collaborate efficiently
4. Reuse knowledge effectively
5. Increase productivity

Visualize, organize, collaborate and FIX IT FAST with smartQED!

Our Innovative Technology Helps Teams Solve Problems Faster

The Problem

Incident Resolution is very often slow and laborious due to inefficient collaboration within and across teams, inadequate knowledge reuse, delays due to ad-hoc and unclear strategies, and shortage of subject matter experts. The team collaboration problem has worsened at these challenging times when people are working remotely due to the virus crisis.

Our Solution

Visualize problems as Investigation Maps™ to enable faster collaboration – see potential causes for a problem in a structured way, with in-context details per cause and automatic merging of concurrent user updates. Also *augment human intelligence* via Machine Learning on prior problems - see cause & action recommendations for faster resolution of new problems.

Efficient and effective collaboration is of utmost importance for remote teamwork. Our solution brings *significant benefits to distributed teams* in charge of supporting business-critical systems.

Business Benefits

Solve problems faster

Operational or technical problems can cause revenue loss & reputational damage. smartQED lowers MTTR (mean time to resolve) *by up to 50%, improving reliability.*

Track resolution progress easily

Provide your customers, managers and key stakeholders with *clear visibility* into your investigation progress through automatic real-time reporting.

Collaborate efficiently within and across teams

Boost shared understanding through our visual tools. Reduce the burden of out-of-context communication like email updates and manual reports. Have *everyone on the same page quickly* and remove duplication or delay of work from uncoordinated actions.

Reuse knowledge effectively

Eliminate endless tedious "search and read" of prior incidents and knowledge articles. *Easily reuse expert knowledge* within & outside the enterprise through our automated cause and solution recommendations.

Increase team productivity

Firefighting of urgent incidents distracts from regular business operations. We reduce person-hours taken to solve a problem *by 30% or more*. We also up-skill newer team members through the solution recommendations, helping them accomplish more in less time and with much less training.

WHITE PAPER

Product & Architecture Summary

QED Space
Investigators & managers come together virtually to solve problems and collaborate efficiently using this visual workspace with Investigation Maps™.

QED Case Base
Structured knowledge repository for resolved problems with their symptoms, context, causes & solutions.

QED Insights
Integrated Recommendation Engine that learns from solved problems and gives precise cause & solution suggestions to expedite the resolution of new problems.

Automated Reporting
Summary or detailed information about investigation progress for better inter- and intra-team communication on incidents.

Managers' Dashboard
Displays aggregated data and KPI trends to help managers review problem statistics and make well-informed decisions.

QED Insights helps you to easily FIND likely causes and solutions without having to SEARCH and READ repeatedly.

The Product
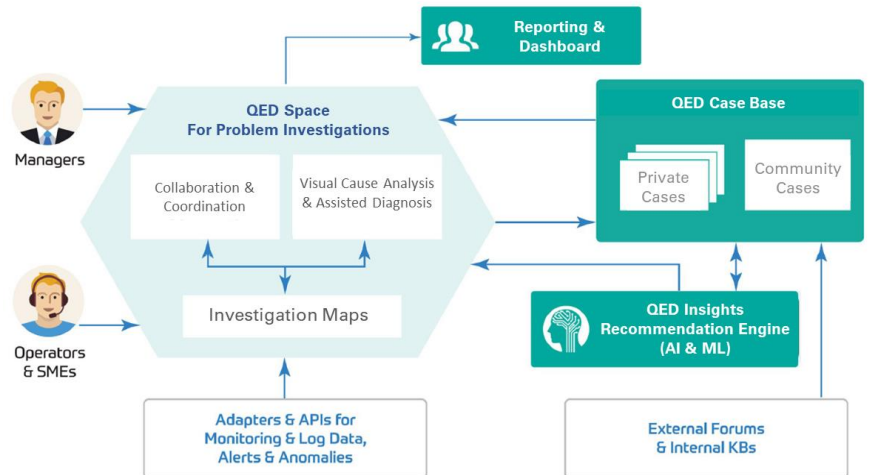
Architecture

QED Space
This visual workspace is where investigators and supervisors collaborate virtually to solve incidents and problems using our Investigation Maps. External data such as alerts & log errors can be pulled in through our REST APIs to associate as evidence in the cause analysis.

QED Case Base
This is the structured knowledge repository of problems along with their symptoms, context, causes & solutions. The QED Case Base supports continuous learning as knowledge is automatically captured from Investigation Maps while users solve problems within QED Space.

QED Insights
This is an integrated ML-based recommendation engine that analyzes solved problems in our QED Case Base to generate likely cause & solution suggestions for new problems, based on their observed symptoms. These suggestions are computed from historical problem data with similarity matching and analytics by our powerful & proprietary AI/ML algorithms.

Automated Reporting & Dashboard
Summary or detailed information of investigation progress can be easily generated and emailed out using this convenient module. The dashboard displays aggregated data and KPI trends to help with the decision-making of managers and supervisors, based on problem statistics.

Fix it Fast!

Unplanned Outages
Collaborating under high pressure with large teams is greatly facilitated by QED Space, with visual Investigation Maps to clearly track the problem-solving approach, status and actions.

Junior Staff
Suggestions provided for new problems by our QED Insights Recommendation Engine upskill junior staff who can easily reuse knowledge without tedious searching and exhaustive reading of prior incidents and knowledge bases.

Root Cause Analysis
Our Investigation Maps eliminate or greatly reduce confusion, duplicated work, and uncoordinated actions through clarity of approach and easy visual status tracking. Automated Reporting facilitates both internal as well as external communication regarding the incident.

smartQED helps your teams resolve problems significantly FASTER and EASIER, helping improve the reliability of your products or services.

Use Cases

Unplanned Outages & Incidents
Operations & support teams frequently face strong pressure to resolve incidents faster due to stringent SLA agreements & risk of goodwill loss with customers, especially for business-critical situations and systems that have high availability requirements.

For urgent incidents, "war rooms" often need to be started for firefighting. Multiple SMEs come together to investigate and solve such problems. The size of such teams may range from a few people to a few hundred. *Collaborating under high pressure with large and/or remote teams* is greatly facilitated by our collaborative QED Space, with visual Investigation Maps enabling clear tracking of the plans and progress, and putting everyone on the same page quickly.

Junior Staff
Skilled staff may often leave the team for newer projects and senior staff may retire. Difficulties and delays in resolving issues often happen when less experienced/junior staff need to handle emergency incidents and un-planned outages.

QED Insights Recommendation Engine greatly helps to reduce delays in such scenarios. *Junior staff are upskilled* and can easily leverage accumulated problem-solving knowledge without manual searching and repeated reading of prior incidents and knowledge articles.

Root Cause Analysis of Complex or Cross-Functional Problems
Investigating faults or incidents that are complex and/or cross-functional often require root cause analysis by different teams, sometimes working remotely in different time zones. Serious glitches are likely in such scenarios. Task handover and shift changes can result in duplicated work. *Uncoordinated actions may cause delays due to lack of clarity* regarding the investigation plans and progress. Periodically, customers and stakeholders need to be informed of the current status and next steps - this reporting task can become repetitive and tedious when done manually.

Our Investigation Maps enable methodical investigations by distributed teams, with clear approach and status tracking for complex problems. Investigators, managers, customers and stakeholders can all be on the same page easily, eliminating confusion. Automated Reporting effectively relieves the burden of manual communication of the progress and plans, increasing team productivity.

Our Approach to Accelerate Resolutions

Collaborative Investigation Maps ™
are highly effective for joint problem solving by teams and also for automated learning from prior problems – it is one of our key innovations!

These maps show the potential causes for a problem structured as a *Cause Tree* or alternatively, as a *Fishbone / Ishikawa diagram*, with various details associated to a specific cause such as symptoms (errors), fault status, notes, attachments, actions, and more...

The maps are concurrently updatable by many users, with merging and notification of updates to others, putting everyone on the same page. Audit logs track all updates and can be added to your incident tickets.

Investigation Templates

You can also create *QuickStart Templates* to easily share and reuse problem-solving knowledge from earlier issues and from the experts, helping to jumpstart your problem investigations.

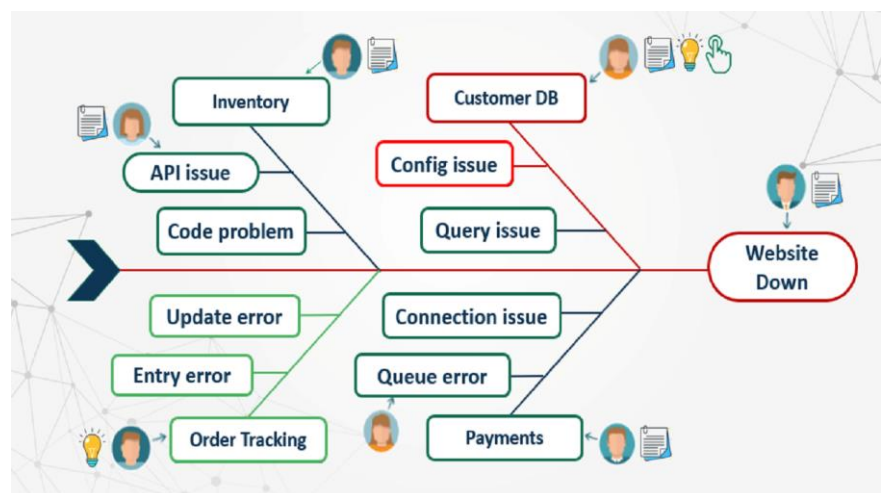Our mission at smartQED is to eliminate the delays in incident resolution. We do that in 2 major ways:

1. Through our Visual Investigation Maps™ that enable efficient team collaboration with easy tracking & reporting of plans and progress.

2. By augmenting human problem-solving intelligence with our powerful Machine Learning algorithms that generate useful recommendations from historical data of solved problems.

Collaborative Investigation Maps™

Investigation Maps™ are a *key innovation* in smartQED. You can use these visual maps to depict a hierarchy of potential causes for a problem clearly in the form of a *Cause Tree or a Fishbone / Ishikawa diagram*, an established and popular method of root cause analysis (RCA) in various industries. You can also *associate specific details to a cause* such as symptoms (evidence), fault status, notes, attachments, actions and more, for effective *in-context* collaboration which greatly reduces confusion and effectively enhances shared understanding.

These maps are *concurrently updatable* by multiple users, with automatic merging & notifications to others, helping to put everyone on the same page quickly. *Updates are tracked in our audit logs*, and they could be inserted into your incident tickets for time-based recording of the updates.

You can also use our *QuickStart templates* to jumpstart future problems. Templates enable convenient re-use of knowledge from earlier issues and from the problem-solving knowledge of your skilled domain experts.

ML-powered Investigation Maps™ enable efficient and effective problem solving by teams, significantly reducing the MTTR and increasing productivity.

Investigation Maps

Augmented Intelligence

Errors and anomalies input to QED Insights will find and rank similar problems without manual searching. We further analyze the Investigation Maps of matching problems/work to generate suggestions for likely cause and actions, jumpstarting the resolution process.

About smartQED

smartQED, a startup founded by Silicon Valley veterans, provides an ML-powered visual workspace for efficient and effective problem investigations. *Investigation Maps™*, our patent-pending innovation, learns from historical data to provide likely cause and solution recommendations for new problems, significantly reducing resolution times and increasing team productivity.

Contact Us

Scan here to learn more about our innovative Products & Services.

Website: www.smartqed.ai
Email: info@smartqed.com
HQ: San Mateo, CA, USA

Fix it fast with smartQED, try our app
**https://app.smartqed.ai**

Augmented Intelligence through ML-powered Recommendations

When a new problem is detected by your monitoring or alerting systems, the errors observed in different components can be input to QED Insights, which uses our *well-integrated and ML-powered Recommendation Engine* to automatically find and rank similar problems that were resolved earlier, *eliminating manual searches*.

We further analyze the matching problems to *aggregate the results and prescribe likely causes and known solutions* for the problem. These precise suggestions provide valuable starting points for your new investigations, helping to keep them focused on causes and solutions that are relevant for your system based on its history.

Recommendations greatly reduce the time taken to resolve your new issues, and also minimize the number of experts who need to be involved.

Blueprint
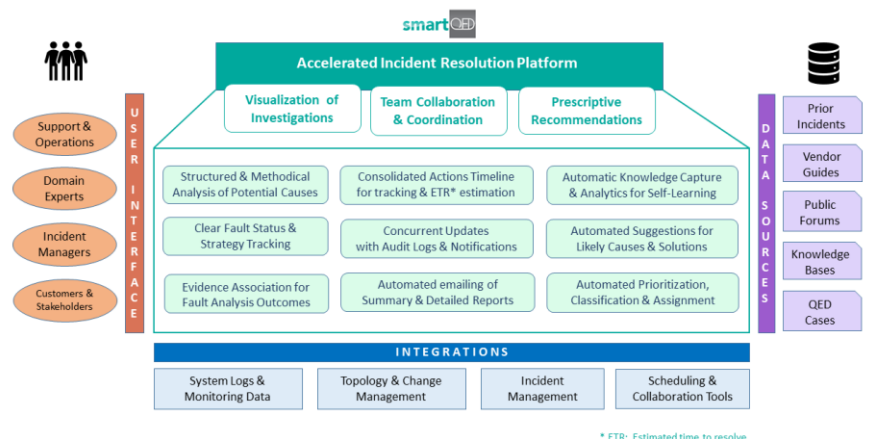
Data sources for the automated recommendations in smartQED may include prior incident tickets, vendor trouble-shooting guides, internal & external forums/OEM knowledge bases, and of course, all problems resolved/worked on within your own QED Space.

Integrations are supported through our REST APIs with various ecosystem tools such as log collectors, monitoring & alerting systems, service ticket / work management products, and chat, email & other collaboration tools. *smartQED fits in smoothly into your existing eco-system*, working well with tools like JIRA and Slack to accelerate your incident resolutions.