

The Quality KISS

Introduction

Keeping it simple with Knowledge, Implementation, Simplicity & Systematic methods

Quality processes can become overwhelming. In today's business climate, it has become more important to focus on the result rather than the process to get there. Given this framework there are ways to keep quality solutions simple and strategic. Getting back to the basics will help most organizations navigate the complex world of quality adeptly with the finesse that is required to keep momentum going in an environment of extremes.

This paper will discuss some keys for keeping quality streamlined, practical and, most importantly, achievable. By building a framework for quality activities on each of your projects using existing personnel and leveraging project personnel, a quality department can extend their reach. In fact, engaging non-quality personnel in 'process watching' can be rewarding not only to the quality of the end product but also to the overall development process.

In order to implement a streamlined quality program, a Quality manager needs to understand four keys:

Knowledge: Train non-quality personnel

Implementation: Devise pertinent quality checklists and manage by influence

Simplicity: Communicate goals effectively

Systematic: Analyze and promote process improvements using metrics, evaluations and rewards

Using the Quality KISS, a quality manager can engage an entire organization in process improvements. They can do this with no incremental increases in resources and improve the overall quality of not only products but also processes.

Knowledge

Imparting quality concepts to an organization may be easier than it sounds. Realize first, that for a quality program to be embraced, the entire organization has to understand the role of quality and the goals. By engaging the appropriate people – those doing the development and supporting services work, you are building a team that understands the mechanisms of change and the need to engage the organization.

At Metrowerks, we leveraged this required training by engaging the organization early in process definition and pilots. This set the stage to allow them the understanding of the processes they needed in order to be able to perform process assessments in the future.

Some of the challenges of training non-quality personnel are that these personnel may lack:

Quality background
Public relation, professionalism, communication skills
Organization skills
Auditing background
Vision of overall process

This list above is a starting point, but how do you recognize and mitigate these problems?

Quality Background

One of the first things that you will notice with non-quality personnel is that they often confuse software assessments with audits. They fear that they will be the ‘police’ and that they will be seen as the ‘bad guy’ of the project if they take on a quality role. Most non-quality personnel with this background will be very hesitant to take on a role of that sort. In fact, in our own organization, the ‘test group’ has an overly heavy burden on being the assigned Software Quality Engineering Advocate – after all, the organization sees them as the police anyway – so why not add ‘process police’ to their job description?

We have mitigated the problems described above by:

- **Hosting weekly training and process forums:** In order to educate future SQE Advocates, we had to define and train all personnel on the basics of the Capability Maturity Model for Software (to be referred to in the rest of this article as CMM for brevity).
- **Educating Management:** Convincing management that SQE Advocates are management material is one of the first steps we undertook in order to raise awareness of the critical role of the SQE Advocate. Management has bought-in to this idea – after a bit of training – and now they understand that the SQE Advocate personnel understand the overall process better than most personnel.

Public relations, professionalism, communication skills

Of course, it is easy to train the specifics of a particular methodology and guideline – or easy compared to trying to train behaviors!

SQE Advocates' personalities and communication skills are certainly as diverse as the engineering populations they work with.

Not every person is adept at tactfulness, professionalism or managing the project team. These skills are essential to communicating process issues and getting results. You will be able to tell whether your SQE Advocate is being effective by the types of comments you get post-review and at milestones. If you hear things like "I'm afraid of our next assessment" or "I hide every time I see Annie Advocate coming" – then you know you have a communications problem.

You can mitigate these sorts of problems by:

- **Coaching:** By modeling dialogs for SQE Advocates, you can teach them how to communicate good or bad news. It is important to be able to deliver constructive criticism of process adherence.
- **Training:** There are several good books on communication and accountability. The book we are currently using for this is "The Oz Principle"

Organization skills

Lack of organizational skills can create more chaos than the process chaos you were trying to avoid in the first place! The signs of organizational issues are that you cannot find process audit information easily, that the team is not being informed of results in a timely manner and that the audits are only being done sporadically.

Organizational helpers include:

- **Providing checklists** – By providing appropriate checklists, you make the work easy and help in the organization of information. You don't have to rely on each individual to set up his or her own reporting scheme.
- **Adding activities into your project management schedules** - By building SQE Advocate activities directly into your project management scheduling, you – and the advocate – can track when to do an audit and what processes need to be audited.

Auditing background

Your chosen SQE Advocates might demonstrate more 'auditing' personalities than you really want! This might be demonstrated by writing up projects on minor non-compliance issues, being dogmatic about your organization's chosen processes or 'forgiving' blatant non-compliances. Other symptoms of the lack of an auditing background are that your SQE Advocate is simply 'lost' about what to do. This can be followed by a general reluctance to accept a 'process' role.

We addressed these problems in the following ways

- Providing extensive checklists and activity descriptions (as mentioned earlier)
- Holding monthly SQE Advocate meetings - These meetings gather all SQE Advocates with the Quality personnel in a discussion of general topics, activities, and responsibilities. This forum allows a free-flowing question and answer session as well as training opportunities.

Vision of overall process

In order for the SQE Advocates to align on a common goal and purpose, they must understand that the role of 'quality' is to assist in building a world-class process that the organization can follow. They need to be given the 'big picture' of quality and the role of the SQE Advocate within that picture.

You can address this issue in your organization by:

- Building a message around quality being a 'core value' of the company
- Creating specific job descriptions that support the role of SQE in building a world class company
- Creating a rewards system that recognizes and rewards the contributions of the SQE advocates

Implementation

Ultimately, organizational improvement efforts fail if the projects are not properly implemented. The goal of the KISS approach is to create ways that processes can be simply and effectively implemented. We often tell our project personnel that the process should never be larger than the project! In order to help guide project teams and their associated SQE Advocates, we developed tools to assist them in implementing their quality activities within their projects. Two keys to accomplishing this were the creation of practical quality checklists and the ability to manage by influence.

Checklists

The checklists we created were practical roadmaps that the SQE Advocates could use to guide them in their day-to-day activities. Although we had an initial plan of how these activities would be implemented we found that we needed to follow an evolutionary process for developing the checklists.

We had to ensure that the checklists were valid, accurate and – most importantly – easy to use. An outline of our approach was as follows:

Evolutionary Process

Initial focus utilized diverse user groups

Piloted and refined checklist

Executed continuous process improvements

Migrated activities into an on-line management tool

As with any good process improvement, we gathered input from diverse groups, piloted the checklists and used the results of the pilot to improve the checklists. We then examined the checklists carefully and converted the items on the list into tasks that could be tracked in our project management tool. This resulted in a streamlined version of the checklists and eliminated the need to track ‘papers’. By building in the tasks, we could track milestones and create project reports targeted at quality activities.

Managing by Influence

Our Quality department consisted of 1.5 full time personnel. This is not unlike many ‘Quality departments’ in the real world! Consequently, we had to determine a way to manage the rest of the organization while not actually having line-authority over anyone. Taking a tip from Malcolm Gladwell’s book: *The Tipping Point*, we determined who the thought leaders were in the organization and targeted them. We had key process area ‘champions’ in the organization who were engineers who ‘owned’ a particular key process area (project planning, for example), and we learned to leverage the influence of the right people at the right times in order to be able to ‘manage’ with no direct reports. The other component of getting the right people aligned to the quality goals is the annual performance assessment process. The following list shows the key people and commitments we used to ‘manage by influence’:

Utilize champions

Engage upper management

Annual goal commitment

Executive team participation

It is difficult – or impossible – to convince individual contributors to do something new, especially when they don’t actually report in any way to the Quality department. By utilizing key personnel including key process area champions, and upper management, you can ‘tip’ the organization in the quality direction. You need to engage the right people in your organization to be effective ‘influencers’. In addition, some measure of accountability needs to be present in your organization. If quality is specifically called out in the company’s goals and these goals are specific, measurable, attainable, reasonable and time bound, you can measure your progress and build in accountability to the personnel review process. The executive team needs to be aware of the goals and drive them, not by their words, but by their actions. In this way, you can implement quality activities easily and effectively in a relatively short period of time.

Simplicity

Quality can become a bad word in an organization. If the Quality message is too complex, it becomes overwhelming for an organization as a whole to understand. People tend to throw up their hands in “oh no, this is just one more thing we have to do” mode. Rarely are quality initiatives welcomed with open arms! So, the job of the Quality manager is to simplify the message and make it, well, ‘sexy’. Not only does the message need to be simple, the methods of delivering the message as well as the administrative activities need to be attractive. The following messaging modes helped us to make the message palatable.

Weekly forums

Project team meetings

Reporting

Administration Activities

We did everything we could think of to spread the message. At first we offered free lunch to everyone who attended our meetings. This was a bigger draw than you might imagine. Instead of ordering the same old thing, we actually delivered hand-made meals to the SQE Advocates and their managers. We brought in things like: Frito Pie, Roast Beef and Potatoes, Tacos, King Ranch Chicken and other comfort foods. We always had a dessert. So, you see, we were definitely not above bribery! Our plan worked and we had between 20 and 30 attendees every week. By the end of our first year of effort, people were gaining a respect for the quality program (and a few pounds!).

To bolster the seriousness of the effort, we encouraged SQE Advocates to attend weekly project meetings to carry the word to the teams. They were very successful in raising awareness for quality issues that included getting the right documents in place, building in our configuration management system, and conducting the proper planning activities. Whenever an activity was missing, it was up to the SQE Advocate to simplify the quality message so that the project team understood that we were serious about the Quality guidelines. Our process has been so successful, that project teams now allow the SQE Advocate to completely halt a project for quality non-compliance issues (including too many bugs in the release candidate).

By building the Quality activities into our project-tracking tool, we now have the ability to pull reports on project Quality compliance. We are honing this – and all our processes – continuously and have simplified the activities to reflect each project’s needs. We have also built in a very simple process whereby a team can write an ‘exception’ report to explain why our processes don’t fit their current situation. In all ways, we keep our processes - and process work-arounds – simple.

Lastly, we also build in the administration activities into our tracking tool. Now the SQE Advocate can follow the project plan semi-automatically by checking their tasks in the project management tool. Since we eliminated the need for individual checklists, Quality personnel can simply check their next task in the project by

utilizing the project-tracking tool. In addition, we simplified our project documentation by writing process documents that cover 80% of our organization's processes. For example, our Software Configuration Management Plan and Software Quality Assurance Plan are organizational plans. We expect all projects to follow these plans and simply document the exceptions and specifics (people, places, and timelines) in the project's development plan. In this way, we have greatly reduced the need for administration of the project documents.

Systematic

Keeping all these efforts systematic allowed us to stay extremely focused and to remove much of the human personality and emotion for the equation. It elevated the focus of the effort to the upper management level. SQE Advocates do not feel like they are being thrown to the wolves and the project teams do not feel like an individual is trying to sabotage their project. The utilization of an automated project-tracking tool has been the key. Automated tools can easily be utilized to coordinate efforts and collect the data from the projects systematically. This information can be used as a basis for the following efforts:

Metrics

Evaluations

Rewards

Metrics

CMM compliance became an important metric since compliance was a goal listed on our balanced scorecard. Determining this status and gathering the data was largely accomplished by strategically designing the applicable CMM activities into the project management tool. This allowed weekly, monthly, or quarterly reports to be generated that quickly displayed the status of all CMM activities. Also, input from the SQE Advocate's evaluations and activities feed directly into the equation. Interviews were also conducted to collect project compliance. In some cases, an automated polling tool was used to quickly assimilate topics and gather qualitative input in a Likert scale style to support metrics on a human level.

Reporting these results graphically on the company's central communication intranet page was extremely effective. Project competition, along with peer pressure became an immediate factor.

Evaluations

Once our overall processes were standardized, we were able to construct standardized evaluation methods that could be easily executed by the SQE Advocates. And by evaluating the documented processes against the project activities, we began a cycle of continuous improvement. During the first year, practically each time a project was evaluated, updates to our processes were a result.

When it was discovered that a project was using a methodology for development that was different than the standard methodology, our first step was to assess which of the two was the better methodology. Sometimes, it was actually the rogue process that was the better. When evaluations uncovered deviations, we investigated the

nonstandard methodology's ability to deliver on time and within budget, a product that met the customer's quality expectations. Project performance was always the determining factor when deciding which methodology is the better. After the initial baseline of our methodology, some of the processes changed on a monthly or quarterly base.

Rewards

Rewards for participation in the new methodology and for involvement in the SQE Advocate effort were intrinsic and extrinsic and included movie tickets, restaurant vouchers, and certificates. The most powerful of all rewards was the sincere, specific, positive feedback to the individual's manager into the personnel appraisal system.

In Summary

The economy has been very hard on organizations. Each company must adapt to the changing landscape, but sacrificing quality can never be a good solution. The Quality KISS method can help any company – small or large – to manage their quality programs by creating 'quality' people across the entire organization. By dispersing the quality role to individuals within their functional areas (projects, management and test, for example), you not only spread the role of quality but also spread the understanding of quality and the purpose of quality processes across the company.

Engaging with project personnel spreads the responsibilities across the organization and empowers individuals to take a quality approach to all their work. Job satisfaction comes with a job well done. Getting quality closer to the hearts of individuals also empowers them to recommend further improvements. These improvements would come much faster than if the quality organization were in its own silo.

The Quality KISS method can help you in your journey to build a world-class quality organization that no longer depends on 'someone else' to help project teams with quality. By moving the everyday tasks into project teams, a company will gain an ability to be agile in a highly competitive world. Ultimately quality results are revealed in bottom line profits.

Agility comes to companies in the form of **KNOWLEDGE** of what is needed, the tools and guidelines to be able to **IMPLEMENT** the activities, keeping the quality messaging **SIMPLE** and understandable and finally building a **SYSTEMATIC** way to integrate quality processes into everyday work so that it becomes "the way things are done around here".

If you work to the principles outlined in this paper, you are likely to get a Quality-KISS from your board of directors.