The Road to Developing an Effective Quality Management System (QMS): Part 1 - Why Bother?

By Tracy Barnhart, Quality Manager
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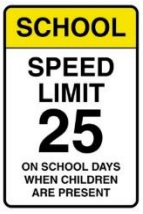
Why Bother? It seems like a lot of work for nothing.

Ease up on those brakes! Developing an effective QMS does require precious time and resources, but the benefits will far outweigh the work involved when the procedures and processes are followed and *continually improved*. An organization can benefit from developing and implementing an effective QMS in many ways. Here are some of the best:

- **Increased Efficiency** Much thought goes into developing a QMS, the result of which will be improved time management and use of resources. Once the QMS processes are established, guidelines are in place for employees to easily follow, like a well-marked highway.
- **Sustainability** Having established guidelines makes it simpler and less time-consuming to train new employees and transition existing employees to other positions. These guidelines are also helpful when tackling infrequently performed activities, or when key employees are out of the office. This will result in a smoother ride for your organization when facing those occasional potholes.
- **Improved Consistency** All of your key processes should be sufficiently defined, outlined and documented in your QMS. This will help you steer clear of guesswork and error, and will promote consistency in how the work is done.
- **Boost Employee Morale** Clearly defining roles and responsibilities, and how specific roles affect quality and the overall success of your organization, can contribute to a more knowledgeable, motivated, and satisfied staff.
- **Improved Customer Satisfaction** Did that make you turn on your high beams? The QMS defines the processes and procedures that can lead to providing high quality products and services to your customers. As mentioned above, increased efficiency and consistency will translate to increased customer satisfaction.
- **Process Improvement** The focus of any QMS should be on the continual improvement of processes. An effective QMS will have built-in systems that contribute directly to *continual improvement*, such as corrective and preventive actions, root cause analysis, and internal audits. Accidents happen – learn from them.

So, what exactly IS a quality management system (QMS)?



Technically speaking, a QMS is a set of coordinated activities to direct and control an organization in order to *continually improve* the effectiveness and efficiency of its performance. Think of it as a road map to managing your processes and activities, or a systematic way of doing business. These processes and activities work together to help an organization achieve a common objective: providing quality products and services to customers. (To learn more about what quality really means, check out this article: "What is Quality, Anyway?")

Here's a simple example. One common process in a testing laboratory is training new technicians. But is that really just one process? Probably not. Your training program likely involves many different processes: the trainee reads the test methods, watches a demonstration of the tests, performs the tests under supervision, has their competency evaluated periodically, etc. Let's not forget the documentation involved – completing ongoing training records, obtaining authorized signatures, filing the records, etc. All of these steps work together to ensure you have an effective training program.

How do I get started? This seems pretty complicated.

It's not as hard as it sounds! When developing a quality management system, the first (and most important) step is to define what quality means to your organization. This decision will ultimately have a great impact on the direction your QMS takes.

A common method of defining quality is in the form of a quality policy statement and objectives. A quality policy statement includes an organization's philosophy regarding the quality of its products and processes. For instance, an organization may state that customer satisfaction and timely services are its top priorities. Specific quality objectives, or goals, can then be formulated from this statement, such as achieving 100% customer satisfaction or providing services within 24 hours of a request. Measuring and tracking these goals is a great way to ensure that the organization's QMS is effective.

Although not specifically required by all quality management system standards, a quality policy statement can be thought of as the backbone of QMS. An organization should strive to ensure that its key processes are always in alignment with the quality policy and objectives.

Driving Quality Home

Once defined, an effective quality management system must be maintained. The steps to maintain a quality management system include three main components:

1. *Say what you do* – document key procedures, keeping the quality policy and objectives in mind.
2. *Do what you say* – perform processes in accordance with written procedures.
3. *Prove it* – maintain records to document activities.

The most common foundation for a QMS is something you've probably heard of – the (often dreaded) quality manual. The quality manual should include a written description of how important processes are performed and... *how those processes connect*. (Remember the road map?) The quality manual is your handbook to the QMS – it should tell you what the processes are and where important documents can be found.

Where do I go from here?

Part 2 of my series on Developing an Effective QMS will focus more on getting started. I will include some advice on tackling the initial development phase as well as tips, tricks, and pitfalls to avoid. What should (and shouldn't) be documented? How can an effective QMS help you with document control? Part 2 will also include a discussion of the AASHTO Accreditation Program (AAP) and AASHTO R 18 requirements, including tools that will help you ensure your QMS is in tip-top shape. Future articles will expand on maintaining your QMS and the ways in which AASHTO re:source has directly benefited from establishing a formal QMS of its own.

AASHTO re:source (formerly AMRL) In Focus

The Road to Developing an Effective Quality Management System – Part 2, Getting Started

By Tracy Barnhart, Quality Manager
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It's time to hit the road and get this QMS thing started! The first part of my series (Part 1 – Why Bother?) focused on the many benefits of developing and implementing an effective QMS. Let's see where this road will take us next.

You Already Have a Head Start!

By now, your organization probably has defined quality and quality objectives as they relate to your business. You may have even developed a nifty quality policy statement to tie everything together. The next step is to think about what you *already* do. It's likely that you already have at least some of your organization's key processes documented, such as the employee training program, equipment calibration and maintenance programs, sample management system, and test reporting steps. You have been keeping records of these activities too, right? Are these key processes in alignment with your organization's definition of quality (i.e. the quality policy)? Great! Chances are you also have an organizational chart as well as position descriptions and résumés for staff. Guess what? You're already well on your way without having to do anything extra (yet)!

…But Everyone Has to Follow the Rules of the Road

If your organization is required to be in conformance with specific quality management system standards, such as *AASHTO R 18, ASTM C1077, ASTM E329*, or *ISO/IEC 17025*, it's time to take a look at those requirements. You will need to ensure that your "i's" are dotted and your "t's" are crossed. If you haven't already done so, you might have to formally document your procedures for contract review, purchasing, responding to complaints, and corrective actions, among other things. Heck, you might even have to start doing (and documenting) some new things, such as developing a document control system, soliciting feedback from customers, and conducting regular internal audits. Sound overwhelming? It's really not so bad. Just chip away at it, and always keep your laboratory's quality policy, and the benefits of these activities, in mind…

Remind Me Why Am I Taking This Trip Again?

A fully documented and effective QMS will ensure that the requirements of both your organization and your customers are met. The QMS will ensure that (1) your organization efficiently uses its available resources, such as personnel, materials, information, and technology, and (2) your customers have confidence in your organization's ability to deliver the desired products and services by consistently meeting your customers' needs and expectations. Those are some pretty darn good reasons to do this, right?!

Ladies and Gentlemen, Start Your Engines!

My best advice in getting started? Keep it simple and to the point. Over-documenting unnecessary details wastes time, and you'll likely end up with a quality manual that is never referenced. Focus on the important stuff first – what your laboratory already does (key processes), and what is required by the QMS standards. It's okay to document other stuff too, like safety and human resource policies, especially if those things are of value to your organization. But does the quality manual really need to include details about ordering coffee supplies? Sure, enjoying a good cup of java is a nice way to start the day, but it probably doesn't have a big impact on delivering quality products and services to your customers.

Your QMS will likely include a series of standard operating procedures (or SOP's), work instructions, and policies. When it's time to start writing, think about what is truly important to note about those specific processes. Steer clear of the fluff and concentrate on the facts. Remember, the QMS should act as a guideline for employees to easily follow, like a well-marked highway. You don't want to muck up the road with a lot of detours that won't help you get to your ultimate destination of developing an effective QMS.

Another great tip is to get as many key people as you can actively involved in the process of developing your QMS. Getting buy-in from others in your organization will help distribute the workload, and you will also get valuable input from those that are directly involved in the important processes you are trying to describe. Having everyone on board will ultimately help with the implementation of the QMS as well, since employees have invested their time in the development of it.

Atlas or GPS?

Once everything is properly documented, you will have to decide if your QMS information will be available on paper (hard copy), electronically, or both. It's really your preference, but you may find that having electronic access to everything will be more user-friendly and will help with document control. If all documents are kept in an electronic file and there are no hard copies available, you won't need to worry about your staff using outdated or inaccurate information. Many organizations have their QMS documentation immediately available to employees right at their fingertips, through the company website. This eliminates the need to track down a binder on a dusty bookshelf in a remote location, but the choice is entirely yours.

Hazardous Conditions Ahead!

So, what can go wrong with a QMS? First and foremost, don't lose focus on what quality means to your organization when developing your QMS. That being said, most QMS problems can be categorized in one of the following ways:

- *Required documents or records do not exist*. Do you have all required documents and records available for review? Checklists can be very useful to ensure everything is in place.
- *Documents or records are incomplete*. Does each document and record include all required information? Are all fields completed on all records, such as dates, signatures, etc.? Again, try using checklists to verify everything.
- *Documents are inaccurate*. Does your documentation accurately describe what you are doing today? Be careful not to copy the examples in *AASHTO R 18* verbatim or borrow information from other organizations – you probably do things at least a little differently.
- *Documents and records are not current*. Is your organizational chart current? Have equipment records been updated in accordance with stated intervals? Customers that responded to the previous article's Reader Survey indicated that they use the calendar feature in Microsoft Outlook to keep track of technician competency evaluations, equipment calibrations, proficiency sample testing deadlines, and even upcoming audits. This easy-to-use software allows you to enter due dates and automatic reminders into personal and company calendars to help keep you organized, on time, and in compliance.

Tips for a Smoother Ride

If you are new to the AASHTO Accreditation Program (AAP) scene, or even if you'd like to revamp your existing QMS, the first step is to ensure that you have a current copy of *AASHTO R 18* to review. This document is included in the *AASHTO Standard Specifications for Transportation Materials* book set, and it is also sold as a single standard through the AASHTO Bookstore. *AASHTO R 18* clearly spells out all of the documentation requirements, and the appendix includes many example documents and records to help you develop your own QMS.

AASHTO re:source Has To Check Its Oil Too!

Part 3 of my series on Developing an Effective QMS will focus on how to finish and maintain your QMS, as well as the ways in which AASHTO re:source has directly benefited from establishing a formal QMS of its own. Until then, I wish you a productive trip on the QMS superhighway!

The Road to Developing an Effective Quality Management System (QMS): Part 3 – Finish What You Started

By Tracy Barnhart, Quality Manager
Posted: November 2012

Let's Recap

Before we end this journey, let's go over the road we've traveled thus far. In Part 1, you learned what a QMS is and some of the many benefits of having an effective QMS. I also discussed developing a quality policy statement and goals, and how a quality manual is the handbook to a QMS. In Part 2, I taught you how to get started with developing your QMS documentation, and you learned some tips to help ensure your documentation is effective. Now it's time to head for the finish line! Along the way, I will be taking some U-turns to elaborate on a few things previously mentioned in my series, such as maintaining your QMS, getting buy-in from others, and document control.

How AASHTO re:source Went From Covered Wagon...

...to Sports Car!

Before I go any further, let me begin by sharing how we at AASHTO re:source have benefited from developing our own QMS. Like most organizations, we haven't always had a formal QMS in place. Believe it or not, we had to start from scratch too! Sure, we've always maintained important records like customer requests and on-site assessment reports. But twenty-five years ago, many of our policies and procedures were not formally documented. This led to some miscommunication and inconsistencies among employees because we relied too much on our memories. Every time we trained a new person, it was like reinventing the wheel because we didn't have documented training guidelines. Time and resources were wasted trying to remember what we had done last time, and it was a struggle to maintain consistency.

We got on the QMS bandwagon gradually over the years. We learned that properly documenting what we do leads to better time management and use of resources. New assessors coming on board? No sweat! Everything is written down in detail, from the recruiting and hiring process through the extensive training program. Everyone knows exactly what their role is in these processes, and how to perform and document their activities. This is particularly beneficial when key employees are out of the office – someone else can easily step in and take the wheel by following the specific guidelines we established. There is no guesswork involved. We are driving in style now!

The Finish Line Is In Sight!

At this point, let's assume your QMS is fully documented. Key processes and anything else required by applicable QMS standards are adequately described. But is "adequate" good enough? Maybe it is. But maybe it isn't. Keep in mind that your QMS should help you continually improve the effectiveness and efficiency of your organization's performance. Having a bunch of meaningless words on paper just to fulfill documentation requirements probably isn't going to boost performance. Make your documentation count! Here are some tips on how to do that:

- Expand on the important details, if necessary. Are your words too vague? Do they make sense? Better yet…
- Cross-check what is written as you actually perform a specific QMS task – are all the steps included from start to finish?
- Ask yourself if someone unfamiliar with the task, like an auditor, can get a good understanding of the process solely by reading the information. If not, make adjustments.

Good to go? Great! Now it's time to begin the maintenance phase…

Wait…What? MAINTENANCE?! I Thought I Was Done!

The QMS is a "living" system. If you want it to be valuable to your organization, your QMS must be periodically reviewed and updated. You wouldn't drive your car for 5 years without ever changing the oil or rotating the tires, right? Well, why would you want to always use the same old QMS without ever checking it to make sure the information is current and

accurate? Remember, the QMS helps your organization achieve its goals. How can you ensure customer satisfaction if your QMS information is outdated and inaccurate?

In Part 1, I discussed the three basic components of maintaining an effective QMS: 1) Say what you do, 2) Do what you say, and 3) Prove it. In other words, if you say you calibrate thermometers every 6 months, make sure you are actually doing that and that you have records to prove it. Maintaining your QMS can be a daunting task, but it is very important to ensure that your documentation accurately reflects your laboratory's activities. Otherwise, what's the point of having a QMS in the first place? As you know, a lot can change in just a year or two. The documents you created two years ago were probably perfectly fine at the time, but now you may be doing those things quite differently.

It is a good idea to check your road map (i.e. the QMS) regularly. Remember how I suggested getting buy-in from others in your organization when developing your QMS (in Part 2)? That concept can also ease the pain of maintaining your QMS. For example, I have a regular review process in place at AASHTO re:source for all of our QMS documentation. At least once a year, I circulate each document to the personnel that are directly involved in that particular process. Each person reviews their part in the process, notes any changes or comments, and forwards the document to the next person on the list. The last person to review the document is the process owner, the person who has ultimate responsibility for the performance of a process. The process owner approves the changes and I update the "road map."

Don't forget about your record-keeping. Maintenance is just as important here, since records prove that you are properly documenting QMS activities. Implementing regularly-scheduled quality activities such as internal audits and management reviews is an excellent way to ensure that your records are complete and up-to-date. These activities will prompt you to review records that may otherwise go unnoticed.

Lastly, be mindful of document control during the maintenance phase of your QMS. How do you know when changes are made, and how do the users know they have the most current version of a document? AASHTO re:source's QMS is only available electronically to employees through our website, so only the most current version of each document is accessible. Also, each of our documents includes a revision date for extra document control assurance. The revision date allows us to easily track the last time changes were made, and instantly shows us if an outdated document is still in use.

Win the Race!

The ultimate rewards on this QMS journey are continual improvement and increased customer satisfaction. As a service organization, AASHTO re:source is very focused on the needs of our customers. Having clearly defined, continually maintained processes in place has greatly improved our efficiency and consistency. The end result has helped us achieve our most important objective of all - complete customer satisfaction. (And we can prove it!) Why not see what an effective QMS can do for you?