

Results of new metrics in technical publications

Diane Davis, Senior Member, Silicon Valley Chapter, and Bruce Moore

At Synopsys, many products and supporting documentation are released at the end of a release cycle. Because releases are time-based rather than content-based, meeting the timetable is critical. Our Technical Publications department is engaged in an ongoing effort to establish effective metrics to assist in meeting this timetable.

For each software release, writers develop a documentation plan that is designed to ensure that they meet the timetable. Each writer develops a documentation plan that is reviewed and approved by the core team, the editor, and the publications manager. This plan sets the final due-to-production date and the plan includes a short period for the production staff to prepare the document.

If writers are late in handing-off their documents to production, that staff is forced to try to make up for the delays by working long hours to process the documents in an very compressed time period. Because production occurs at the end of the cycle, the production staff has traditionally borne the burden of making up for a writer's failure to meet milestones earlier in the cycle.

In an effort to relieve pressure on the production staff and to increase awareness and accountability, the publications management staff recently decided to establish a clear means of determining whether documents were handed-off to production on time. All writers were instructed to notify the production manager when their document was deposited into the production directory and to send an e-mail message to the person tracking the handoffs.

This new procedure had mixed results. Some writers followed the instructions and sent e-mail messages to the appropriate people. Others notified only one person—usually the production manager, rather than the person tracking the handoffs. Because the person tracking hand-offs and the production manager did not have the same information about which documents were

deposited, an element of confusion was added to the tracking process. To reduce the confusion, the production manager and the handoff tracker decided that the e-mail message was the official indication of document handoff (not the actual deposit of the document in the production directory).

Another difficulty was encountered in establishing a clear accounting of the books handed-off to production. It involved the occasional requests by writers to make last-minute changes in documents after depositing them into the production directory. These books were counted as late.

The initial results of the new procedure suggest the following recommendations:

- The notification process should be automated so that the deposit of a document triggers e-mail messages to the appropriate people.
- The process of counting the documents that are deposited on time should be automated and the results should be posted to a Web site.
- A book that is deposited on time and later retracted should not be counted as deposited.

Although the new procedure is helpful in establishing reliable metrics (and is expected to be even more helpful when the recommendations are implemented), it is important to note another aspect of the production process that can affect the quality of documents.

After a document is handed-off to production, a staff member production edits the document. If five or more errors are found, the document is returned to the writer for correction. These corrections are double-checked when the writer returns the document to production. A writer can make other changes to the document during this

Each writer develops a documentation plan that is reviewed and approved by the core team, the editor, and the publications manager.

See "Metrics" on page 5.

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Publication Policies

We welcome articles for "BookQueue," "What's Hot," or "In the Trenches." Articles should be 400 words or less. Email or phone the *DocQment* acquisition manager, Jennifer Atkinson, if you want to review your topic before submitting an article or to request style guidelines.

Submit your articles at any time during the year to the *DocQment* editor. We prefer ASCII text via email. You can also mail us a 3-1/2" PC- or Macintosh-formatted diskette with ASCII text, Word, or RTF files. (Please mark format and application version number on the diskette and include your phone number and name.) All articles will be edited for length, clarity, and appropriateness. Include a brief bio statement.

You may reprint original material appearing in *DocQment*, as long as you acknowledge the source and send us a copy of the publication containing the reprint.

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New members get involved

As the Quality SIG Manager I am pleased to announce that two new members have stepped up to the plate and accepted positions within the SIG. Amy Perry from Indianapolis is our new Techniques and Processes subgroup Chairperson. This position has been vacant for some time now, and I thank Amy for offering to take on this important task. I know that many of you have expressed interest in being members of this group, and now that we have a chairperson, I encourage you to contact Amy and see how you can help in reactivating it. Amy can be reached via email at aperry@nisys.com.

Ceretha Andrews from Decatur has volunteered to act as our liaison with the Policy & Procedures SIG, keeping her eye open for articles in Steps & Specs that would be of interest to Quality SIG members and getting permission to reprint them here in *DocQment*.

THANK YOU, Amy and Ceretha. Welcome aboard!

Quality SIG listserv address change

The STC has changed the location of its listservs from majordomo to lyris. This might explain why you haven't been able to access the list lately if you've tried the old address. The new address for sending postings is stcqsig-l@lists.stc.org. Any member who was registered under the old address has been automatically transferred to this new address. Please send your postings to this new address.

Quality SIG plans for Orlando in May 2000

The leadership of your SIG has submitted a proposal to host a panel at the Annual STC Conference in Orlando in May 2000. Lead by you SIG Manager, Robbie Rupel (Membership Manager), Steven Jong (Metrics Subgroup Chair) and Don Lenk (our "he's everywhere" guy) have proposed hosting a panel about real life quality situations that we've dealt with and are dealing with related to quality documentation. We are hopeful that their proposal will be accepted by the program committee.

If any of you are a part of other presentations that are accepted for the conference, let me know. I plan to publish as complete a list as possible of the presentations that feature Quality SIG members in *DocQment* before the conference.

By the way, plan on coming to Orlando in May 2000 to enjoy all the great presentations. Be sure to sign up for the SIG luncheon and attend the SIG meeting so that you can meet other members of this great group.

SIG additions

Well, not really a SIG addition, but an addition to one of the leadership team member's families. Jennifer Atkinson, our Acquisitions Manager, has a new baby girl!!! Congratulations to both mother and daughter. I hear that they are doing fine. Cheers, Ralph

Quality SIG membership report

Robbie Rupel, Quality SIG Membership Manager

As of August, the STC Quality SIG has 645 members (up from 538 members). Welcome to our newest members in the United States from Alabama, Arizona, California, Colorado, Florida, Georgia, Illinois, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Texas, Utah, Virginia, Washington, and Wisconsin. Welcome to our newest international members from Belgium, Brunei, France, Finland, India, Israel, Ontario, Canada, Quebec Canada, Singapore, Sweden, and the United Arab Emirates.

If you would like to be profiled, please contact me at rupel@inlink.com and write a brief article focusing on the following questions:

- What do you do and where do you work?
- Why did you join the Quality SIG?
- What quality-related issues are you currently facing and how are you trying to resolve them?

Until next time.

Achieving quality beyond ISO 9001

David Dick, Member, Belgium Chapter

Ensuring the usability of a product (Is it easy to use, learn, and maintain?) is an important element of quality. ISO 9001:1994, "Model for Quality Assurance in Design, Development, Production, Installation and Servicing," specifies (quality system) requirements for achieving customer satisfaction by preventing non-conformity at all stages from design through servicing. What then does ISO 9001 have to do with usability when the word is not even used in the text?

ISO 9001 has a lot to do with usability because improving usability of a product is essential to quality. It includes requirements for ensuring the compatibility and integrity of the design, the production process, installation, servicing, inspection and test procedures and the applicable documentation to ensure that a product conforms to defined user needs and/or requirements.

Achieving ISO 9001 certification requires the establishment and maintenance of documented procedures as a means of ensuring that a product conforms to specified requirements, and procedures conform to the **best practice** to ensure quality. But what happens when an organization does not have a usability program?

An organization without a usability program will document its existing processes of testing functionality and reliability. However, function testing does not indicate if a product is going to be usable, only that the software allows people to perform certain tasks. Reliability testing verifies that the software is robust. Neither test indicates

whether users will be able to find what they need, understand what they find, or figure out how to use it. Although they are not true measures of quality they are sufficient for satisfying the requirements of ISO 9001.

True quality of product design is a result of a usability process that includes usability measurement and improvement. The process involves pre-designing user and task analysis tools, observing and interviewing users, building usability into design, and prototyping with rapid iterative usability evaluations throughout the product life cycle. These processes provide the documentation necessary to satisfy ISO 9001.

If a company has a quality manual, part of it should be the company's process for measuring and improving usability. Any company that wants to be ISO 9001 compliant must have well documented processes, and usability should be part of those processes. Proponents say that first the processes must be documented before quality can be improved. However, if the proponents do not understand that improving quality also means improving usability, then true quality cannot be achieved.

Information about ISO and the catalog of standards is available from the ISO home page at www.iso.ch, and the American National Standards Institute at web.ansi.org.

David Dick is a technical writer with Swift in La Hulpe, Belgium.

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Visit the STC Quality SIG web site at <http://stc.org/pics/quality/>.

If you aren't already signed up for the discussion on our listserv, send an email to lyris@lists.stc.org and in the body of the message enter:

subscribe stcqsig-l <your name>. (The character at the end of stcqsig-l is a lowercase L.)

To post a message for others on the listserv to see, send an email to:

stcqsig-l@lists.stc.org.

If you are already signed up for the discussion on our listserv and wish to unsubscribe, send an email to lyris@lists.stc.org and in the body of the message enter:

unsubscribe stcqsig-l <your name>.

A look at ISO 9001:2000

Ralph Robinson, Senior Member, Toronto Chapter

This article is a continuation of one that appeared in the Winter 1999 edition of DocQment. It is based on a thorough examination of the draft ISO\CD2 9001:2000 standard that is currently under review by members of TC 176 (the Technical Committee of ISO responsible for the ISO 9000 series of standards).

Changes in the ISO 9001:2000 Family

Aside from the structural changes discussed in the last issue of DocQment, there are five major changes that will impact a company's quality management system, and therefore the documentation supporting it. Let's take a look at what these changes involve.

Changes in Terminology

ISO 9001:2000 uses words that are familiar to most of us in business today. This shift to more common business oriented language will make it easier for users to understand the requirements of the standard.

Some examples of the changes in terminology are: the use of quality management system instead of quality system, organization instead of supplier, subcontractor instead of supplier, and product instead of product and/or service. This simplified language will help to eliminate disputes between companies and their registrars that resulted from the ambiguous wording of the 1994 version. These language changes will also make it easier to understand and apply the conformance standard to an organization's processes.

Changes in Scope

As I indicated in the previous article, ISO 9002 and ISO 9003 will cease to exist with the release of the ISO 9000:2000 series of quality standards. Companies will now register to a single conformance standard, ISO 9001. The new registration certificate will indicate any activities defined in ISO 9001:2000 that do not take place in the organization as part of its scope of registration.

Clause 1.2, Reduction in Scope specifies how the requirements of ISO 9001 can be excluded and/or modified in order to fit an organization. This will allow companies to adapt quality management systems previously registered under ISO 9002 or ISO 9003 into the revised ISO 9001 standard.

Additional Customer Satisfaction Requirements

ISO 9001:2000 contains three subclauses that formally specify customer satisfaction requirements. Subclause 5.2, Customer Requirements, spells out the requirements for ensuring that a company's processes meet customer requirements. Subclause 7.2, Customer-Related Processes, clearly requires organizations to identify customer requirements for their products and/or services, perform contract reviews, and establish systems to ensure effective communication with its customers. Subclause 8.2.1.1, Measurement and Monitoring of Customer Satisfaction, defines requirements for companies to determine what types of customer satisfaction data they need and how it should be collected. This subclause does not, however, attempt to define a specific type or amount of data that needs to be collected.

Formal Continuous Improvement Requirements

Many of the clauses in the present standard, such as internal quality audits, corrective and preventive action, and management responsibility infer that continuous improvement should become part of a company's quality system. In reality, few organizations adopted this focus since it wasn't necessary for conformance to the standard, and therefore not audited.

One of the major differences between ISO 9001 and ISO 14001 and QS 9000 is that the latter two embed continuous improvement as an auditable element in their management systems. By following this lead, ISO helps harmonize the quality management system with other management systems present in organizations today.

Increased Focus on Management Responsibility and Assurance of Resources

While this is more of a clarification of intent than a change, the new wording clarifies top management's responsibility to establish an effective quality management system leading to customer satisfaction and continuous improvement. Specific subclauses have been added which define requirements for information

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This shift to more common business oriented language will make it easier for users to understand the requirements of the standard.

Musing on metrics

Buggy whips, the Arch Deluxe, and quality improvement

Steven Jong, Senior Member, Boston Chapter

I hate to admit it, but sometimes quality is not enough to ensure success. Do you know who made the world's finest buggy whips? Neither do I. Doubtless the manufacturer continuously improved its product to a fare-thee-well, but once the automobile became popular, the market for buggy whips (to say nothing of the market for buggies) evaporated, and there was nothing to be done about it.

For a modern example, consider the McDonald's Arch Deluxe hamburger. It was introduced in 1997 to increase the company's market share among adults. It was a variation on an existing product, not a huge departure. Despite a \$200 million ad campaign, the product fared poorly. I think part of the problem is that adult tastes are turning to Mexican food. McDonald's can't win us over with better burgers when what we want is tacos.

In quality terms, building a better burger is an example of continuous improvement, while the automobile was a quantum improvement over the horse-drawn buggy.

Another term for a quantum improvement is a paradigm shift—a revolutionary change that overturns all that came before it. Even high-quality, market-share leaders tremble at the thought of a paradigm shift, which can lay low the mighty and eliminate whole industries. The problem is that a paradigm shift is hard to spot; and even when recognized, it can be so radical and traumatic that some people, especially those with a vested interest in the status quo, can't bring themselves to embrace it.

One well-known example is watch design. Remember the seventeen-jewel watch movement? The quartz watch movement is simpler, cheaper, more reliable, and far more accurate. Amazingly, it was invented by a Swiss watch engineer; but the Swiss watch industry only saw its dominance of the world market and literally refused to consider the quartz movement. Representatives of two

companies not then in the watch market, Texas Instruments and Seiko, saw the invention at a trade show and persuaded their employers (who had nothing to lose) to take the plunge. Today the watch industry is dominated by Japan, and the mechanical watch is a novelty item.

Technical communicators have seen more than our share of paradigm shifts. Desktop publishing changed the way we produce documents; HTML is changing the nature of documents themselves. I can remember a thirteen-week print production cycle involving production editors, compositors, and proofreaders. Today, I can produce a finished document in one week; or I can have it on the Web in one day. Having a high-quality print production process won't spare you from paradigm shifts. (I doubt there are many proofreaders left in our business.) If you are devoted to print when your company's competitors are moving online, there may be a career change in your future.

Is this the lesson of history—that quality improvement is meaningless? What's the point if you can fall victim to a paradigm shift anyway?

I think you need a system, and a mindset, that lets you recognize when to jump. I don't know who made the best buggy whips, but I do know who made the best buggies: Fisher, which was astute enough to shift from making carriage bodies to making auto bodies, and today survives as part of General Motors. I think your quality toolkit needs two tools: sandpaper, to hone your products and processes finely, and an axe, to make big changes when warranted. Is there a quality methodology that embraces both continuous and quantum improvement? Yes—and I'll talk about it in my next column.

Next time: Documentation and ISO 9000

Steven Jong is Documentation Manager at Lightbridge, Inc., in Burlington, Massachusetts. you can reach him at jong@lightbridge.com.

If you are devoted to print when your company's competitors are moving online, there may be a career change in your future.

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time, however, either intentionally or unintentionally, and there is no way to check the quality of these changes without another complete production edit. Because there is neither time or resources for another production edit at this stage, it can be concluded that this aspect of the production process introduces an unavoidable source of potential error that is at an acceptable level.

Diane Davis is the Design Tools Group senior publications manager at Synopsys in Mountain View, California. Bruce Moore is the System-Level Design Technical Publications Manager at Synopsys in Mountain View, California.

The importance of the quality culture

Kim S. Cameron, Dean, and Albert J. Weatherhead III, Professor of Management, Weatherhead School of Management, Case Western Reserve University

Since its emergence in the 1970s, the quality movement in the United States has been hailed as a panacea and condemned as a failure. Many firms have labeled TQM a failed fad of the 1980s, while others have labeled quality their key strategic advantage and have invested heavily in quality initiatives.

How can we explain why quality is at once a success, a passe fad and an exciting new strategy? Why do some firms find the money invested in quality initiatives to be a waste of resources, while others find growth rates and profitability significantly enhanced? One major reason is that any improvement initiative, by itself, is unlikely to produce positive outcomes. Implementing techniques to improve quality is unlikely to succeed unless the initiative is embedded in and reflected by the culture of the organization. Organizations, in other words, need to adopt a quality culture, not just a quality process or set of quality techniques. Unless the culture is supportive, quality initiatives fail.

What does it mean to adopt a quality culture? It means that quality is reflected in the basic values, the general orientation toward work, the taken-for-granted assumptions and expectations, and the ideology of the organizations. In the words of George Bush, when announcing the formation of the Malcolm Baldrige National Quality Award, "...quality is not just a strategy. It is a new style of working, even a new style of thinking. It is a way of life..."

What's interesting is that there are three different models-or paradigm-that characterize the way organizations approach quality. My colleagues and I have discovered in our research that the quality culture adopted by the organization, or the quality paradigm that dominates the thinking of organization members, has greater impact or success of quality improvement initiatives than any other factor.

The three dominant quality cultures – discovered as a result of our studying several hundred organizations in the United States and Europe – might be characterized as follows. An error detection culture exists in organizations that stress avoiding mistakes, reducing waste, and finding and fixing errors. An error prevention culture exists in

organizations that prevent errors, emphasize zero defects, and eliminate root causes of problems. A creative quality culture exists in organizations that emphasize continuous improvement coupled with innovative breakthroughs relating to quality.

The power of an organization's dominant quality culture can be illustrated by a three-year study in which my colleagues and I gathered data from 64 organizations. We sought to explain why some of these organizations achieved exceptional levels of effectiveness whereas others were less effective. All the organizations had tried to implement quality improvement initiatives. Our findings provided strong evidence that, despite the particular quality tool or technique adopted by the organization, the dominant quality culture explained which succeeded and which didn't. We compared organizational performance to industry averages, competitors' performance, and the firm's own past performance. As might be expected, organizations that were characterized by an error detection culture performed the least well. Organizations that were characterized by an error prevention culture performed the next best. The most highly effective organizations were those characterized by a creative quality culture. The values, assumptions, expectations, and orientations of members in those organizations were more important than the techniques implemented. Among the attributes they had in common were these:

- Constant monitoring was present so that errors were prevented before they occurred.
- Everyone in the organization, including staff support personnel, was held accountable for quality improvement.
- Standards were constantly being raised, and improvement was a superordinate goal.
- Customers were often surprised and delighted by organization members other than customer service representatives.
- Problems were solved for customers that they didn't expect – and would not have requested – to be solved.

Implementing techniques to improve quality is unlikely to succeed unless the initiative is embedded in and reflected by the culture of the organization.

See "Culture" on page 7.

The Quality SIG newsletter team needs your help

Richard Colvin, Senior Member, Washington, DC Chapter

The Quality SIG is looking for individuals who are interested in contributing time and energy to the production of this newsletter, *DocQment*. Over the past four years many staff members have worked to bring you this newsletter. Among them are Lori Fisher, Jennifer Atkinson, Ralph Robinson, Elizabeth Hidalgo, Sophia Marx, Jacqueline Morris, Christina Carew, Robbie Rupel, myself, and others. We thank them for their dedication and effort. As we approach a new year, many of these folks would like to move on to other commitments. In order to do so, we need new volunteers to step forward and take on production and editing work for the newsletter. I have detailed some of the positions that we would like to recruit for as we approach the new year.

Production Editor: The primary responsibility for producing the newsletter lies with the Production Editor. This individual uses PageMaker and a postscript printer to layout the newsletter and print a camera ready copy. This individual also coordinates with the printing firm to print and mail newsletters to our US domestic members. Written procedures for producing the newsletter detail work flow, layout and style issues, and printing instructions. This position requires about 6 hours of time per quarterly issue.

Acquisitions Manager: This position has the primary responsibility of soliciting and obtaining content for the newsletter. This individual solicits content from members of the Quality SIG, from other STC members, and from individuals and publications outside of the STC. This position requires about 4 hours per quarterly issue.

Acquisitions Editor: This individual is responsible for editing the submissions collected by the Acquisitions Manager. Most submissions are provided in softcopy in text or Microsoft Word files. The Acquisitions Editor uses written style guidelines and directly edits the submissions in preparation for initial production. This position requires about 3 hours per quarterly issue.

Copy Editor: The Copy Editor reviews the post-production copy of the newsletter to markup typos, nonconformance to *DocQment* style, and layout errors. Markups are usually performed on hard-copy and transmitted via FAX or mail. This position requires about two hours per quarterly issue.

If you are interested in taking on any of these positions, please contact Ralph Robinson at r2innovations@myna.com.

Richard Colvin is a writer living in Washington, DC.

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resources, infrastructure resources, and the work environment.

The new structure will assist organizations in transferring information contained in ISO 9004:2000 into guidelines for developing an effective quality management system that will translate into processes required to meet the requirements of ISO 9001:2000.

Summation

ISO 9001:2000 is not an evolutionary upgrade in the same manner that ISO 9001:1994 was over ISO

9001:1987. This revision is a major overhaul of the standard, bringing it up-to-date with current management philosophies and methods. It is intended to make the standard more usable, easier to understand and apply, and applicable to a broader cross-section of businesses in the new millennium.

Ralph Robinson is the author of the book "Documenting ISO 9000: Guidelines for Compliant Documentation," available through R2 Innovations in Mississauga, Ontario, Canada, and the STC Quality SIG Manager.

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- New standards for customer preferences were created through innovation and creative problem solving.

The key finding from this investigations was that organizations that had developed a quality culture reflected by these attributes were significantly

more likely to perform at levels that exceeded industry averages, competitors' performance, and their own past performance that organizations characterized by either of the other two quality culture paradigms.



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