



Chicago Quality Assurance Association

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The Quality Journal

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March 2012*

Message from the President

Our IT profession has evolved from generalists, where an individual performed all roles within the software life cycle, to distinct disciplines that bring specialized knowledge and competencies to a project team. Supporting these IT roles are various non-profit associations across Chicagoland and globally. Just like in our jobs where collaboration across IT roles is critical to the success of our projects, collaboration across the profession associations brings a wealth of cross-discipline knowledge and opportunities.

CQAA is actively collaborating with PMI-Chicagoland, IIBA Chicago Chapter, Chicago SPIN, and the IEEE Chicago Section in several ways. We have an excellent relationship with their officials and participate in and help promote each others organizations and events. For example, David Heidt, from IIBA Chicago, presented at our February Program on '*10 Principles of Smart Requirements Gathering*'. I had the opportunity to participate in an association panel discussion held by IIBA Chicago representing our IT software quality and testing presentation.

At the upcoming QUEST 2012 Conference and EXPO, CQAA has a booth along with these four partnering associations. It is a great opportunity to introduce our software quality and testing professionals to the associations of other disciplines. Also at QUEST, these associations are joining together on a panel discussion about '*IT Disciplines: Collaboration, Competencies, and Careers*'. If you will be at QUEST on Thursday, May 3rd, please be sure to come to the panel, learn about the other disciplines, their associations, and professional certifications. We hope to see you there.

Enjoy our early spring!

Nancy Kastl, President CQAA

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Chicago Quality Assurance Association

The Quality Journal

March 2012

CQAA News



Save the Date

QUEST Conference & EXPO 2012

April 30 - May 4, 2012

Chicago is the hosting city for the 2012 North America QUEST Conference (Quality Engineered Software and Testing). QUEST is at the Westin Lombard Yorktown Hotel. CQAA Members receive a 10% discount. For more information or to register, see www.qaiquest.org/2012.



Membership – A Great Option to Consider

For those of you who are part of CQAA as Contacts, **Cindy Glaser, CQAA's Membership Director**, has a great message for you below.

If you're a QA/QC professional, or any other IT professional who values quality, the last few years have been a time of tremendous change for you. Perhaps you have made the transition to Agile. You may be working with offsite or offshore teams. Most likely you're being asked to do more in less time, and find yourself as much as a risk manager as you are a software tester. You may even be in transition and are planning your next move. Staying ahead of the game, staying relevant, is crucial as our industry changes.

As you're already aware, the Chicago Quality Assurance Association is working to identify trends and issues in our industry and provides opportunities for our members to learn, network and collaborate with peers, and establish credibility through certification. Chances are you have already attended a CQAA program or conference and have applied what you've learned back at the office.

As a member of CQAA, you will be the first to learn about our monthly programs, conferences and classes, and you will receive the CQAA Quality Journal, a periodic publication that reports from the front lines of our industry, all presented and written by professionals like yourselves who know how to succeed, now and in years to come.

I invite you to become a member of CQAA. Becoming a member is as simple as going to our [website](#) and signing up. **There is no cost to become a CQAA member**; in fact membership in CQAA can mean discounts on conferences and special events. If you do not become a member, you may miss out on offerings that are valuable to you.

I hope you will join the Chicago Quality Assurance Association and look forward to seeing you at one of our upcoming events.

April Speaker Program

Exploring How the Mobile App Project Is Shaping the Way We Approach Quality

Tuesday, April 17, 2012 – 1:30 to 4:00 PM

About the Topic

According to Cisco, the number of mobile internet-connected devices will exceed the people on earth by 2016. While this represents an enormous opportunity to establish new ways of connecting with your customers, it also creates a substantial risk to your business. The business impacts should these risks manifest themselves could impact revenue, cost, and customer loyalty. Bob and Jeff will discuss strategies and steps for implementing Quality Management for Mobile Devices and Applications. They will take you through the key areas of testing and why they are critical to achieving your business goals. Mobility is continuing to exceed expectations in adoption by both consumers and enterprises. The complexity and scenarios to be accounted for are growing exponentially. How will your business keep pace and reduce risk? Join Jeff to learn how to navigate the mobile landscape and gain critical insights into Quality Management for Mobile Devices.

Key Learning Objectives

The goals of this presentation are to:

- To compare and contrast traditional projects and Mobile projects. Big bang versus incremental exploring testing approaches for both
- Point out challenges for mobile quality, and how to mitigate risks associated with mobile technology
- Present Simulators and Emulators, exploring factors involved for comparing products - are they a good fit for your lab

About the Speakers

Jeff Larkin is a Program Director with 20+ years experience working in the IT industry. Jeff has worked with clients in the automotive, insurance, commercial software and construction industries. Jeff's experience spans the disciplines of Testing Project Manager, QA Team Lead, Quality Management Practice Leader for the Michigan Region and Consultant for Business Process Re-engineering. Jeff brings a wealth of experience working with organizations of varying sizes.

Bob Kustudik has 20+ years of IT delivery experience, much of that in Quality Management. Since 2005, Bob has been growing his mobile device quality management and IT governance experience through assignments and affiliations with United Airlines, Department of Defense, Department of Homeland Security and Alliant Credit Union. Bob maintains membership with InfraGard's Chicago Chapter, Mobile Mondays - Chicago, and has contributed to the Government Computer News (GCN) and to the Government Business Council in regards to mobile computing, IT governance issues and industry standards (NIST and ISO).

Host and Location

Compuware Corporation

Esplanade Conference Center

(ground floor between east and west entrances)

2001 Butterfield Rd.

Downers Grove, IL 60515

Agenda

1:00-1:30 Sign-in & Networking (please do not arrive before 1:00 pm)

1:30-1:45 Welcome and CQAA Announcements

1:45-4:00 Presentation (15 minute break at 2:45)

REGISTRATION IS REQUIRED TO ATTEND THIS PROGRAM.

PLEASE REGISTER BY Monday, April 16, 2012 at <http://www.cqaa.org/>. If you have any questions, please contact CQAA Program Director at programs@cqaa.org

CQAA News (cont.)**CQAA Sponsor Program Highlights**

CQAA offers a number of sponsorship opportunities which are outlined below. Sponsorships help fund a variety of events and activities and serve to minimize participation costs for CQAA members.

CQAA Annual Sponsorships**Service Provider Sponsorship**

Visibility through your company logo, description, and website URL incorporated on the CQAA website as a featured sponsor and recognition of your company as a CQAA sponsor in a variety of ways including recognition at events and CQAA media resources.

Enterprise Sponsorship

Recognition of your company as a CQAA sponsor in a variety of ways including recognition at events and CQAA media resources along with discounts for all employees at a variety of QAI and CQAA events

CQAA Dinner Events Sponsorships

CQAA has two dinner events each year, one in the spring and one in the fall. The dinner event features an industry renowned keynote speaker. Sponsorships include **Speaker**, **Information Table**, and **Dinner Table**.

CQAA Contributors Program

Donations of funds of any amount are accepted as well the opportunity to provide a facility and refreshments for CQAA program events.

Certification Highlights

Professional certification does make a difference for many organizations. In addition to the actual accomplishment, those achieving this status gain valuable knowledge in the profession. The QAI Global Institute provides the certification and local chapters provide some level of support to prepare for certification.

CQAA actively supports and hosts study groups and Prep Courses in the Chicago area for the professional certifications listed below. **Study Groups** are provided at no cost to the attendee and are formed based upon the number of people interested and typically meet weekly for a period of several months. **Prep Courses** are delivered over a two day period. Location and cost of Prep Courses is shown below. Go to www.cqaa.org/certifications for more information and to register.

Prep Courses for the Certified Software Quality Analyst (CSQA) and the Certified Software Test Engineer will be held April 30 – May 1. This is the only time these courses will be available in the Chicago area in 2012.

CQAA Job Posting Board

Are you looking for some great people to work with? Whether you are looking to add to your team or looking to join a team, you will want to explore the CQAA Job Posting Board. Since its launch, this service has seen consistent use by companies looking to find software quality professionals. The cost is quite reasonable for companies to post their available positions and it makes perfect sense to connect with the CQAA to find the right talent. If you are in the market, keep checking as new postings appear on a regular basis. The link to the service is on the main page of the CQAA web site.

Member Perspective

Member Perspectives are offered by recognized professionals for the purpose of sharing information with our members on approaches, techniques, or information that may be useful to professional growth and development. The content is the property of the author and any reproduction of this content outside of this publication is not permitted. Anyone interested in this content or the information conveyed in this article should contact the author directly.

About the author...

Jason Glaser has over ten years experience in IT ranging from Help Desk to Quality Assurance. He has been in Quality Assurance for over 5 years and has worked in both agile and waterfall environments. His favorite aspect of QA is discovering problems and working with stakeholders to get them solved. He thrives on being part of successful releases. Jason joined CQAA in March of 2011 and is employed by DeVry.

Feeling Warm and Fuzzy About Testing: “Fuzz” Testing in Automation

Working in QA isn't an exact science. There's never enough time to uncover all the potential issues within a program. Many programs deal with highly sensitive information that could be costly if exploited by an outside source. Fuzz testing helps to uncover potential security issues and hack your own system before someone else does.

Fuzz testing or fuzzing is a software testing technique used to discover errors in the code and potential security flaws in software, operating system or networks by inputting huge amounts of random data into the system to make it crash. Fuzz testing tools called fuzzers help expose vulnerabilities in the software. This type of testing is also referred to as negative testing. The term fuzz or fuzzing originates from a 1988 class project at the University of Wisconsin, taught by Professor Barton Miller.

Fuzzers work best for problems that cause a program to crash such as buffer overflow, cross-site scripting and denial-of-service attack, format bugs and SQL injection. These schemes are often used by hackers to break into a system. It's almost like trying to hack your own system before an outside source can. Fuzz testing is liked because of its simplicity and high benefit-to cost ratio. Often defects that can be overlooked by manual testing and debugging can be found from this process.

Techniques

Fuzzing programs fall into two different categories. Mutation-based fuzzers mutate existing data samples to create test date while generation-based fuzzers define new test data based on models of input. The simplest technique is sending a stream of random bits to the software. A twist on this first technique is mutating the existing input by flipping bits at random or moving blocks of the file around. Another fuzzing method is writing arrays of specifications into a fuzzing tool, adding anomalies in the data to help expose bugs in the software.

Member Perspective (cont.)

Advantages and Disadvantages

Fuzz testing can be random and often times edge-case scenarios. It generally only finds very simple faults. Fuzzers can take shortcuts in testing to find something interesting in a timeframe that humans actually care about. A primitive fuzzer may also have poor code coverage. An example of this is if an input includes a checksum which is not properly updated to match other random changes, the checksum validation code is the only thing verified.

However, fuzzing exposes severe defects within the system. These bugs can be security flaws that let out confidential information. These scenarios could possibly be used by a real attacker in order to obtain this secure information. Many attackers use some of these same tools in order to crack secure systems and take what they want. Fuzzing is real world testing that enhances software security and software safety because it finds odd oversights and defects which human testers would fail to find or write test cases for.

Web Application Fuzzing Tools

Burp Intruder is a tool for automating customized attacks against web applications to identify and exploit potential security issues. Burp Intruder can be used to:

- Perform fuzzing of application requests to identify common vulnerabilities, such as SQL injection, cross-site scripting, and buffer overflows.
- Enumerate identifiers used within the application, such as account numbers and usernames.
- Deliver customized brute-force attacks against authentication schemes and session handling mechanisms.
- Exploit bugs such as broken access controls and information leakage to harvest sensitive data from the application.
- Perform highly customized discovery of application content in the face of unusual naming schemes or retrieval methods.
- Carry out concurrency attacks against race conditions, and application-layer denial-of-service attacks.

Wireplay can be used as a quick approach to preliminary fuzzing of applications implementing totally unknown/custom protocol. The fundamental concept of Wireplay is to read PCAP dumps of valid communication between the target server and its original client application, modify the original client/ server data to introduce possible faults in the server, and replay it to the server. It uses stream socket to communicate with server and uses only the TCP Payload part from the PCAP dumps, avoiding any of the internal details of handling TCP keeping things simple.

HP Webinspect is a web application security assessment solution that works with JavaScript, Adobe Flash, Ajax and SOAP. It helps uncover security vulnerabilities and executes fast and accurate application security tests. Webinspect scans the entire application and communicates the security knowledge needed to reproduce and fix issues.

These tools can help identify and fix potential security risks in your software. Even though fuzz testing can be seen as random, it is important to keep systems secure and functioning correctly. If that wasn't the case, many QA people would be out of a job. Take the next step, even if it's a small one, in making the software you work on safe from malicious hackers.

Industry Perspective

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Adapting to the Present and Future

The perspective offered in this edition is derived from conversations held throughout this year discussing where we stand as a profession. Reflecting on the various conversations and in the interest of involving members in this dialogue, we will seek out the opinions and perspectives from our membership to address the industry as it stands today. Over the next several issues of ***The Quality Journal***, we will publish our findings and your answers.

In the next few issues, we will discuss a few key areas –

What challenges and opportunities do we face as software quality professionals?

What techniques and approaches have been tried to address those challenges and opportunities?

What innovations have been successful in helping organizations and individuals adapt to changing times?

The CQAA Board of Directors and the Editor of this publication will be reaching out to our members to seek your input so start pondering your answers to the above questions. As always, we encourage you to share your perspectives so don't necessarily wait to hear from us. You can reach out to indicate your willingness to be included in this effort by emailing us at editor@cqaa.org.

We began the discussion in the previous issue with our perspectives on the skills requested and required for software quality professionals. In this issue, we will focus on the challenges and the opportunities facing our profession.

Based upon the responses we received on challenges and opportunities, we found some of the classic challenges that our profession has faced throughout the years and some challenges based upon recent changes to methodologies and technology.

The classic challenges include:

- Organizational changes from a team-based to a centralized model or vice-versa
- Promoting Quality Assurance within project teams and across the organization
- Effective management of the test environment
- Completion of software quality tasks in a proactive versus reactive manner
- Measuring the effectiveness of software quality efforts
- Managing requirements beginning with elicitation and change control for requirements through the project life cycle
- Estimating the software quality effort as part of the overall project planning and delivery

Industry Perspective (cont.)

The challenges introduced in recent years include:

- Design and implementation of new approaches, techniques, and technology that work with increasingly diverse and robust application platforms
- Availability of test engineers versus testers to deal with more technical complexity of the applications
- Effective implementation of technology to assist the software quality effort (automation products for management, functional testing, and performance testing)
- Adapting the organization, not just the test team, to a more nimble and rapid design, development, and deployment of applications
- Managing a diverse software quality organization that is dispersed across multiple geographic locations and has a widely scattered set of technical and methodology skills

Many of us have heard some version of the classic phrase “What doesn’t kill us, makes us stronger”. Another phrase heard over the years is “We don’t have problems; we only have opportunities to excel”. Our profession has had many “opportunities” provided over the years and we will continue to see those. Those of us who can view them as true opportunities will enjoy converting the challenges into opportunities.

The opportunities conveyed to us so far include:

- Discovering, adapting, and implementing new tools, approaches, and technologies to our team and across the organization
- Working with application teams who want our help (whether they know it or not) and seeing them embrace quality concepts
- Enabling our teams to become more technically skilled to deliver software quality with evolving technologies
- Defining and deploying organizational models that can adapt to meet the needs of the business (Agile is a start but only the latest model; offshore has been in place – what is next?)
- Infusing the influence of the “test team” to active involvement in the early stages of a project or, more importantly, influencing portfolio management, not just individual projects

Let’s break down the challenges in a bit more detail so that we can begin to lay the groundwork for our next chapter of this discussion – techniques and approaches to address the challenges and opportunities.

Challenges –

- Organizational changes from a team-based to a centralized model or vice-versa
Center of Excellence or team-based? In some organizations, these changes are made annually or more typically when new management arrives. The key to success is in knowing which model fits best for which situation. It is possible and appropriate for both models to exist in one organization. However, change for the sake of change is typically not productive.

- Promoting Quality Assurance within project teams and across the organization

Successful organizations have best practices in place that monitor and evolve quality approaches and techniques on an ongoing basis. In the most challenging environments, a “hero” mentality is rewarded supporting constant chaos. Most organizations are somewhere in between. One of our favorite sayings, “Quality is a Journey, Not a Destination” is most true in this area. While selling the idea of quality may seem to be the toughest part, keeping it fresh and thriving is more of a challenge.

- Effective management of the test environment

Whether you rely on IT Support or are responsible for your own, keeping up with technology to simulate production will always be challenging. Budget constraints may be one factor. Even if the supported platform is stable, having the time to make the necessary configuration adjustments with each release could be hard to accomplish. And let's not even begin to talk about test data.

- Completion of software quality tasks in a proactive versus reactive manner

Not counting the respect factor for the software quality effort, it is the nature of many organizations to want to get the software to the user as quickly as possible. The first step is to define a proactive approach to quality and getting agreement and support, in principle, from the organization. Even though there will always need to be some reactive activities such as discovery and resolution of issues late in the project, total reactive practices only drive up stress and drive down quality. The various versions of the saying “Poor planning on your part does not constitute an emergency on my part” seem to fit in this instance.

- Measuring the effectiveness of software quality efforts

What defines success? It is hard enough to get that defined annually or in a project. Preventing a problem in the application is hard to track and prove. It is also met with a lack of interest by non-quality team members. Our challenge here is to define metrics that are meaningful to the project team and the organization and can be tracked. Bugs found may be easy to report, but impact is probably more interesting to others.

- Managing requirements beginning with elicitation and change control for requirements through the project life cycle

Our first challenge is getting included in the requirements elicitation process, if there is one. After that, it is showing how our quality processes can enable project success. You may have heard this over the years, but software quality professionals are uniquely qualified to enable effective requirements development because we can typically recognize a poorly written requirement when we go to write a test case. Beyond requirements development, the entire project team suffers from poor change control once requirements are approved.

- Estimating the software quality effort as part of the overall project planning and delivery

There are so many factors that influence effort. For us to be successful, we need to understand the labor drivers and impact to our efforts from other team members. While the typical labor drivers are test creation and execution, we need to understand the stability of the upstream efforts as they will impact our efforts. This particular challenge has the opportunity for many mathematical solution ideas but focusing on the basic techniques will serve us best. .

- Design and implementation of new approaches, techniques, and technology that work with increasingly diverse and robust application platforms

Application platforms will always evolve. Our challenge is staying ahead of or, at least, close behind the innovators so we can do what we do best – break it so the users don't have to. We will need to continue to rely on each other to manage this challenge.

- Availability of test engineers versus testers to deal with more technical complexity of the applications
It seems as though this paradigm shift has affected us the most. With all the other changes going on in the technology industry and in our profession, we haven't had the opportunity to grow resources the way we need them. It is tough enough finding people who understand the ins and outs of software testing. We now need them to be on the forefront of technology as well.

- Effective implementation of technology to assist the software quality effort (automation products for management, functional testing, and performance testing)

The magic bullet. We used to rely on the technology vendors to show us how easy technology adoption for our profession could be. It never was that easy and, on top of that, the landscape has changed in recent years. One truth remains – understanding why and how you are going to use technology to do your job, whatever job that is, will give you some ground to stand on for success. Some technology is easier to adopt, typically the test management software. For the rest you need qualified resources and a good amount of money. This challenge should also surface some interesting discussions on achieving success.

- Adapting the organization, not just the test team, to a more nimble and rapid design, development, and deployment of applications

As many of us have learned, nimble and rapid takes some thought, design and effective implementation. It also requires organizational behavior changes. Software quality involvement is even more important to ensure that the organization just doesn't quickly and often ship bad software.

- Managing a diverse software quality organization that is dispersed across multiple geographic locations and has a widely scattered set of technical and methodology skills

Global influences are certainly part of our everyday lives, whether personally or at work. Relative to software quality, many of us are working with geographically dispersed teams. While some adjustments have been made in how we manage the effort and resources, we are still challenged with managing resources with a variety of expertise. Resume writers have made our selection process more challenging. A lessening of a common approach to software quality is also impacting our success. We may not just be dealing with a lack of commonality outside our organization. The lack of a common and known approach to software quality may be lacking within our walls as well.

Opportunities –

- Discovering, adapting, and implementing new tools, approaches, and technologies to our team and across the organization

This opportunity will remain prevalent for the foreseeable future on the technology front. Agile methodology adoption is evolving as organizations determine how best to utilize this approach.

- Working with application teams who want our help (whether they know it or not) and seeing them embrace quality concepts

A definition of success in this area involves public or private requests from other project team members for assistance from the "test" team.

- Enabling our teams to become more technically skilled to deliver software quality with evolving technologies
An active effort of technology training for existing resources is one component of success with this opportunity.
- Defining and deploying organizational models that can adapt to meet the needs of the business (Agile is a start but only the latest model; offshore has been in place – what is next?)
Organizations evolve out of necessity. Success in this opportunity is evidenced by ongoing initiatives in analyzing the effectiveness of the organizational model, adjusting the model, piloting changes to the model, and rolling out the changes with educational activities to ensure quicker adoption.
- Infusing the influence of the “test team” to active involvement in the early stages of a project or, more importantly, influencing portfolio management, not just individual projects
Active involvement in project planning and delivery with education and monitoring of software quality best practices is evidence of bringing the organization to quality maturity.

We have broken down these challenges and opportunities to encourage discussion and development of techniques and innovations. We invite you to offer your insights into one or all of the topics discussed above.

Techniques and innovations addressing the challenges and opportunities will be covered in the subsequent issues of this publication. Sharing of ideas is an important ingredient to the success of any profession. We look forward to hearing from you so we may include your perspective. You may contact any one of the Board members or send an email to editor@cqaa.org.

CQAA LinkedIn Topic of the Month

Recent topics presented to the CQAA Linked-In community are shown below. Listed below is a recap of the discussion.

“A recent survey found that quality assurance professionals are one of the happiest groups with their jobs. Do you agree?”

I agree. Have been a software Quality Engineer for past 12 years. Have experienced the joys of success, but have also learned the bitter lessons of failure.

Also, this article was referenced:

<http://finance.yahoo.com/news/the-happiest-jobs-in-america.html>

Evidence suggests the outsourcing pendulum is swinging back to an onshore hiring trend. What do you think?

I don't see yet obvious evidence as you might see it. It would be very nice and helpful to all of us here in US if it indeed happens

CQAA Mission

The Chicago Quality Assurance Association, the Chicago Chapter of the QAI Global Institute is a nonprofit professional organization that was established in 1984 to promote quality principles and practices within Chicago-area companies. CQAA provides a forum for information professionals to present and discuss quality and process management within information systems, technology, and services.

Objectives

- Provide a variety of educational opportunities in the Chicago area for quality professionals and other advocates of quality.
- Facilitate networking and the exchange of ideas among quality, process management and information technology professionals.
- Sponsor presentations on quality and related topics by experts and by members.
- Foster professional certifications through access to examinations held in the Chicago area.
- Provide an opportunity to earn recertification credits towards professional certifications through membership and attendance at educational programs.
- Maintain lines of communication with other professional associations and foster cooperative activities of common interest.

Chapter Leadership

CQAA is served by a self-perpetuating Board of Directors that meets to plan, implement and review programs and functions. To ensure that the CQAA Board remains strong, the directors have adopted a succession plan. All board positions have detailed descriptions that identify the responsibilities of the Board Members. Board positions that become vacant will be posted on the CQAA website and applications will be accepted at that time.

Board Members

Cindy Glaser, Membership

Nancy Kastl, President

Mike Lawler, Secretary and Journal Editor

Kim MacDonald, Certifications

Fabrizio Stortoni, Programs

Sara Joseph, Treasurer

Upcoming CQAA Events

Date	Title
April 17	Exploring How the Mobile App Project is Shaping the Way We Approach Quality
April 30-May 4, 2012	QUEST Conference