

INNOVATIONS & FUTURE TRENDS FOR EXCELLENCE

Wednesday, October 9, 2024

Concurrent Session (45 minutes)

The "Shift Left" in Manufacturing Quality

10am-10:45am

Presented by: Greta Cutulenco

Area of Focus: Digital

Excellence Session Level:

Intermediate

In today's manufacturing landscape, quality management faces numerous challenges. Defects are often discovered too late, leading to wasted power and materials. Despite the abundance of data collected from manufacturing processes, machines, and product testing, it is often underutilized in day-to-day quality activities. Quality engineers find themselves reacting to defects rather than proactively preventing them. To address these problems, we propose a paradigm shift. In software, "shifting left" means integrating quality management activities earlier in the development process, making it a continuous aspect of operations rather than a final check. This talk explores how this principle can be adapted to manufacturing. We will delve into practical applications of the "shift left" approach. Real-time anomaly detection powered by ML/AI will be demonstrated as a proactive tool to identify process variations before they escalate into major quality issues. Automated root-cause analysis will be presented as a game-changer in diagnosing production failures. By analyzing extensive data points and relationships, this method reduces the time and guesswork involved in identifying the sources of defects. We will discuss the impact that these new techniques can have on manufacturing processes, and how they can be applied.

Concurrent Session (45 minutes)

The Future of Work: Using Generative AI as a Co-Pilot in Process Improvement

10am-10:45am

Presented by: Xander Hathaway, MoreSteam

Area of Focus: Digital Excellence

Session Level: Basic

The future of work is here, and AI is a significant part of it. This session is designed to empower participants with the knowledge and skills needed to harness the full potential of generative AI and LLMs. By treating AI as a co-pilot and an enhancer of traditional tools, professionals can drive innovation and efficiency in their organizations. Join us for an interactive and insightful discussion on best practices for integrating AI into process improvement, and let's explore how to stay ahead in this rapidly evolving landscape. We invite you to bring your ideas, stories, and questions to this session. Together, we can shape the future of work by leveraging the powerful capabilities of generative AI.

QIS Talks (45 minutes)

Harnessing Employee Ideas for Continuous Improvement in Quality Systems

10am-10:45am

Presented by: Katie Armstrong, ArmstrongLin Optimal Solutions

Area of Focus: Leadership Excellence

Session Level: Basic

Many companies make it a goal for management to drive the organization's quality objectives and systems. This can often lead to a top-down approach to rolling out projects, which is intended to improve effectiveness of the quality system and drive innovation. But what if employees at the ground floor were motivated to drive improvements? Flipping the pyramid on its head can be a powerful way to harness the expertise of employees who deal directly with the products, suppliers and common issues on the manufacturing floor.

These employees often have a treasure trove of knowledge built from years of experience. Giving these employees a voice can result in powerful quality improvements that will ultimately help with top-line growth of your company.

Workshop (2 hours)

Lean-AI: A Humanistic Integration of Lean and AI

10am-12pm

Presented by: Dr. Adil Dalal, Pinnacle Process Solutions, Intl & Dr. Elizabeth Cudney, Maryville University

Area of Focus: Operational Excellence

Session Level: Intermediate

The integration of Lean methodologies and Artificial Intelligence (AI) promises a revolutionary shift in operational excellence and organizational culture. Lean, a proven approach for continuous process improvement through waste reduction, pairs with AI's potential to automate routine tasks, provide predictive insights, and enable real-time optimization. This synergy offers numerous benefits, including enhanced predictive capabilities that allow organizations to anticipate and mitigate inefficiencies, streamline operations, and minimize waste. AI-driven systems facilitate dynamic adjustments, aligning perfectly with Lean's principle of continuous improvement. Further, AI's ability to automate repetitive tasks liberates human resources, fostering innovation and strategic decision-making. The advanced analytics and machine learning capabilities of AI augment decision-making processes, offering data-driven insights that enhance accuracy and outcomes. The fusion of Lean and AI heralds a new era in operational efficiency, agility, and innovation, transforming how organizations function and evolve. This presentation will provide practical insights, case studies, and best practices for leveraging AI to enhance Lean initiatives. It explores the profound impact of this integration on organizational culture and offers readers the tools to navigate this transformative landscape. Join us on this pioneering journey where technology meets human-centric innovation, reshaping the future of work.

Concurrent Session (45 minutes)

Continuous Improvement Framework & Best Practices to Achieve Operational Excellence

11am-11:45am

Presented by: Vijay Sardana & Faisal Saleh, Synopsys, Inc.

Area of Focus: Operational Excellence

Session Level: Intermediate

An interactive and engaging session on Continuous Improvement Framework and Best Practices by team members of Global Quality Management System team of an American Company. This session will be focused on the Continuous Improvement Framework and Best Practices (applications of methodologies, tools, and techniques) implemented to solve actual problems faced by teams and will include examples of actual results, and solutions implemented based on the framework and best practices. The framework and best practices can be implemented directly by the attendees in their organizations. This session will provide a high level of value to attendees specially to Engineers and Managers involved in driving Continuous Improvement in their respective organizations to achieve operational excellence.

Concurrent Session (45 minutes)

Using AI in Practical Settings: Use Cases That Apply in Almost Every Industry

11am-11:45am

Presented by: Courtney Burton, MIT45 & Chris Hayes, Impact Performance Solutions

Area of Focus: Digital Excellence

Session Level: Intermediate

Artificial Intelligence is no longer just a buzzword; it has become a reality that is part of our everyday lives. Everyone is talking about AI. AI is a popular subject, both sexy and alluring to businesses of all shapes and sizes. Yet, while there are multitudes of books and presentations on the subject, one consistently missing key element that this session will emphasize is the practical application of AI. This session will introduce three main types of AI: Narrow AI (Siri, Google Assistant, Generative AI, Alexa), Reactive Machines (spam filters and recommender filters), and Limited AI (chatbots and self-driving cars) then deep dive into sharing real examples of how AI is being used in practical ways by companies, both small and large, in many industries, to increase productivity, profitability, employee engagement, and quality and to decrease costs. We will provide real examples, including failure cases to show how to manage the process of trial and error, that can

be applied in most industries and across any size company. This session will open the door to using AI for first time users and provide creative ways to extend its use for those that are more experienced.

QIS Talks (45 minutes)

Innovate Your Career

11am-11:45am

Presented by: Ogunna Njoku, Fannie Mae/NSBE

Area of Focus: Leadership Excellence

Session Level: Basic

Innovate Your Quality Assurance Career: Elevate, Integrate, and Excel My Exclusive Workshop! Are you a Quality Assurance professional eager to advance your career and stay ahead in a rapidly evolving industry? My specialized workshop, "Innovating the Career of a Quality Assurance Professional," is designed just for you. Workshop Highlights: Future-Ready Skills: Gain insights into the latest trends and technologies shaping the Quality Assurance landscape. Leveraging Lean Six Sigma Mastery: Enhance your expertise with advanced Lean Six Sigma methodologies to drive process improvements. Agile Integration: Learn how to seamlessly incorporate Agile practices to boost efficiency and adaptability. Project Management Excellence: Discover key project management strategies to elevate your leadership skills. Certification Pathways: Explore the benefits of obtaining certifications like PMP, SAFe Agile, and ASQ credentials to distinguish yourself in the field. Why Attend? Expert Guidance: Learn from industry leader with over 25 years of experience. Interactive Sessions: Engage in hands-on activities, case studies, and real-world applications. Networking Opportunities: Connect with like-minded professionals and expand your professional network. Career Advancement: Gain practical knowledge and tools to propel your career to new heights. Don't miss this opportunity to innovate your career and become a trailblazer in Quality Assurance.

Concurrent Session (45 minutes)

Develop High-Performing Leadership in Digital Transformation: Best Practices/Importance of Coaching

1:30pm-2:15pm

Presented by: Luis Morales, Genuine Parts Company

Area of Focus: Leadership Excellence

Session Level: Intermediate

An organization's disruptive digital transformation success depends on its managers' and leaders' digital skills and talents. Today's mix of senior, aging-out Gen X, born between 1964 and 1979) and younger Gen Y (1981 and 1994) technology managers and leaders shared in a recent study that they did not have a firm grasp on what are some high-performance fundamentals for driving disruptive digital change or digital transformation, becoming the 4.0 Digital Leader. Also, when recently surveyed, a high percentage of managers shared that they believe a large portion of managers are not effective coaches. Further, managers struggle to find time to prioritize coaching, which is an area that needs development for many managers. In contrast, many managers have never been trained in effective coaching practices. This presentation provides fundamentals of high-performance driving digital change best practices for developing high-performance leaders and shares the importance of coaching for high performance in building, leading, and sustaining an innovative digital organization and building a culture of leadership coaching.

Concurrent Session (45 minutes)

Leadership and Lean Implications for Your Digital Transformation

1:30pm-2:15pm

Presented by: Grace Willis

Area of Focus: Digital Excellence

Session Level: Basic

Digital Transformation is a diluted, overused buzz phrase. Many market leaders express being on their digital transformation 'journey'. Yet, intended strategic outcomes falter. For context on how gargantuan this endeavor is, enter "Digital Transformation" in any job search engine; there are thousands of search results.

The nuanced transformation journey, named Business Transformation, also has a plethora of job listings. However, role descriptions are inconsistent. Interesting is that process optimization is often absent in these transformation initiatives. My 'research' is not of the ilk of venerated PhDs but rather based on observations stemming from my professional experiences. The problem with digital transformations is lackluster leadership. This in turn is characterized by transformation endeavors devoid of value stream analysis, a waste reduction mindset and improvement opportunities such as Kaizen Blitz events. Further manifestations of the problem include lack of vision, objectives and key results, customer-centricity, value stream analysis, process improvement activities and change management. Days peppered with an abundance of wasteful meetings and workshops with unclear outcomes degrade employee morale which in turn becomes a virus in the company culture. In addition to exploring seven manifestations of lackluster leadership, we will examine and discuss the importance of integrating lean concepts into transformations.

QIS Talks (45 minutes)

Applying AI for Continuous Improvement Initiatives

1:30pm-2:15pm

Presented by: Adam Bennett,

Matroid Area of Focus: Digital

Excellence Session Level:

Intermediate

Learn how new advanced technologies are empowering quality and operations domain experts to apply a human-centric approach and continuously improve manual operations. The latest in AI, deep-learning, and computer vision can be deployed to monitor operations in real-time while simultaneously providing video-analytics over time for domain experts to rapidly deploy continuous improvement initiatives. Determine where, when, and why choke points and imbalances exist and execute an action plan.

Workshop (2 hours)

Emerging AI Technologies in Quality Management: RAG, Fine-Tuning, Agents, and Beyond

1:30pm-3:30pm

Presented by: Ronald Kelley, Green Gap Solutions LLC

Area of Focus: Leadership Excellence

Session Level: Intermediate

Step into the future of quality management at the ASQ Quality Innovation Summit 2024. This dynamic session, "Emerging AI Technologies in Quality Management: RAG, Fine-Tuning, Agents, and Beyond," will explore the latest advancements in artificial intelligence and their transformative impact on quality practices. Discover how cutting-edge AI technologies such as Retrieval-Augmented Generation (RAG), fine-tuning, AI agents, vector databases, chunking technology, and mixture of experts can revolutionize your approach to quality management. This talk will demystify these complex tools, demonstrating how they can be seamlessly integrated into quality processes to enhance decision-making, streamline operations, and drive continuous improvement. Gain practical insights through real-world case studies and interactive Q&A, designed to equip you with actionable strategies for leveraging AI in your organization. Whether you're looking to improve efficiency, reduce errors, or stay ahead of the curve in AI adoption, this session provides the knowledge and tools you need. Don't miss this opportunity to enhance your quality management toolkit with the latest in AI technology. Join us for a compelling and interactive experience that will empower you to lead with innovation and excellence in the rapidly evolving landscape of quality management.

Concurrent Session (45 minutes)

Quality 4.0: Learning quality control, the evolution of SQC/SPC

2:30pm-3:15pm

Presented by: Carlos Escobar, Quality 4.0 Institute

Area of Focus: Digital Excellence

Session Level: Intermediate

This presentation marks a significant advancement in the field of quality management, specifically focusing on the evolution from traditional Statistical Quality Control (SQC) and Statistical Process Control (SPC) methods to a more advanced Learning Quality Control (LQC) approach. The research introduces Quality 4.0 (Q4.0) as a novel paradigm that fuses the technologies of the fourth industrial revolution, Manufacturing Big Data (MBD), Industrial Internet of Things (IIoT), Cloud Storage and Computing (CSC) and Artificial Intelligence (AI), with traditional quality management practices. The central theme of this study is exploring the limitations inherent in conventional quality control methods when faced with the complexities of modern manufacturing environments. The author proposes LQC systems as a solution, employing binary classification algorithms to predict and detect defects in manufacturing processes. This represents a shift from reactive to proactive quality measures enabled by AI's real-time data processing capabilities. The presentation delves into the evolution of manufacturing data across industrial revolutions, highlighting the exponential growth of unstructured data and its challenges. Through case studies, the author illustrates the practical applications of LQC systems, demonstrating their ability to learn complex patterns in hyperdimensional spaces and automate tasks traditionally performed visually.

QIS Talks (45 minutes)

Breakthrough Innovation Excellence in Highly Complex Situations Utilizing Generative AI

2:30pm-3:15pm

Presented by: Sadeqh Ben Babaii, Cleaver Brooks Canada

Area of Focus: Leadership Excellence

Session Level: Intermediate

This presentation aims to highlight a case study on a complex social problem using AI integrated approach and compare it to the same work study that was done in 2021 alongside a team of subject matter experts. ESAM® is an innovation platform with total AI capability. Total AI we are referring to both the inclusion of Augmented Intelligence as well as the integration with Generative Artificial Intelligence such as ChatGPT. UN Sustainable Development Goals SDG 4, and SDG 10 aim to bring equal educational opportunities for all. In 2021, we teamed with a group of STEM education teachers in East African countries, Kenya and Rwanda to innovate on a better STEM education for girls. We will demonstrate the complexity of using Ideation ESAM software and highlight some of the generated innovations and breakthrough ideas. The Team collectively spent 50 hours where as using AI tool reduced this by at least 25 hours. The team consisted of internationally recognized innovation leader Bob King, three East African Innovators, and the main author, Sadeqh Babaii, STEM education leader and innovation expert.

Concurrent Session (45 minutes)

Quality's Impact in Advanced Technology & Utilizing Artificial Intelligence

2:30pm-3:15pm

Presented by: Sheila Shaffie,

ProcessArc Area of Focus:

Digital Excellence Session Level:

Intermediate

Technology updates, upgrades, and the next big "thing" - are these keeping your organization's leadership up at night? The significance of technology and its dependency on foundational quality methodologies cannot be understated, especially when considering the impact of artificial intelligence (AI) on our productivity, processes, and economic outcomes. Per previous research published by ASQExcellence, only 27% of 2020-2022 Insights on Excellence (IoE) respondents completely agreed that they have successfully implemented digital transformation technologies. And with the rapid speed and advancement of AI, this may be an even higher concern. Join Sheila Shaffie, co-founder of ProcessArc and ASQ's Financial Services Division, to explore the latest IoE research and key takeaways on quality and AI that you can incorporate into your own organization's digital transformation strategies.