Ascend Webinars

TRANSCRIPT: Quality Impacts in Technology – ASQE Sept 2024 Ascend Webinar

0:01
Hello, everyone.

0:02
We're going to give everyone a moment here to join us, and then we'll go ahead and get started.

0:17
All right, it looks like we have everyone today, so thank you so much for joining us.

0:21
Welcome to our last Ascend Webinar of 2024.

0:26
This is going to focus on the topic of quality impacts in technology with artificial intelligence, machine learning and virtual reality.

0:36
And if you're new to Ascend Webinar, I especially want to say welcome.

0:39
I'm very happy that you're all joining us today.

0:41
This is a thought leadership event that is brought to you by ASQExcellence on behalf of ASQExcellence or ASQE for short.

0:49
My name is Erin Bauer, I am the product development manager for ASQE and my team and I put together the research that will be focused that you'll see or they'll be featured in, in this type of topic focus that you're going to see today.

1:02
And that research is called Insights on Excellence or IoE for short.

1:07
So this Insights on Excellence for research is actually performed by a benchmarking activity that is exclusive to our ASQE organizational members.

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But it's within these types of research efforts that we actually also engage with ASQ's technical communities and the subject matter experts that are members of those technical communities.

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And this is really essential to bring key topics to life for our quality community.

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This also this research is also using relevant data, but to understand which methodologies or tools are most helpful to address challenges that we all might be experiencing.

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So if you are new to Ascend Webinars, these are free to attend as part of your affiliate employee relationship to your ASQE organizational membership status.

1:53
And as a reminder, this PowerPoint deck, a very robust resource guide with quality body of knowledge materials per today's webinar topic are all going to be available to you in the ASQE events portal.

2:06
So this link was actually shared with you through our previous communications as part of the reminder emails and things that you all might have received.

2:14
But we're also going to be putting links to that in the chat today.

2:16
So our team is going to support you with additional resources and ways that you can use this knowledge going forward.

2:22
And then also as it's a friendly reminder, you might have noticed, but this webinar is being recorded today and you'll be able to use that for future reference as well.

2:32
So before we get started with the panel discussion that's really going to get to the heart of what we're talking about today, I do just want to help clarify the relationship between ASQ and ASQE since you may be more familiar with one than you are the other.

2:46
So this diagram here, what this shows is ASQE has a Venn diagram relationship.

2:53
Remember in the heart of it is that IoE relate IoE research that we share with ASQ and ASQ is the older of the two.

3:01
So ASQE was founded in January of 2020, and we serve organizations.

3:06
So our member base is the organizations that have the membership and then all of the employees that decide to affiliate themselves with that to gain benefits and access to certain different benefits.

3:18
On the ASQ side, much doesn't change over there That have been a professional association for many, many years, going back actually to the post-World War 2 era.

3:27
And they're still doing really great things as far as education, training, the technical communities that I had mentioned.

3:34
So it's really a nice ecosystem that brings together both the organizations and the subject matter experts on the ASQ side to bring forward these research efforts.

3:43
So you might see the IoE logo in various communications or emails.

3:47
That's this, this is kind of how this all comes together.

3:50
And as well as the X that you see in the middle of the Venn diagram that is ASQ Connects.

3:55
And that's also fantastic research or I'm sorry, resource for those organizations who get their research findings and need more help.

4:03
There's a vast array of experts on the ASQ Connect side that can help do that.

4:07
So if any of this is a little bit confusing to you or you want more information, you are more than welcome to contact our team and we can help you navigate some of these different aspects or benefits that maybe you aren't utilizing to the fullest capacity just yet.

4:24
But I do want to say it's, it's this ecosystem of connected effort that is how this webinar comes to life and brings the research to life.

4:32
In today's webinar, you're going to meet three of our ASQ subject matter experts that represent three of these technical communities.

4:40
And so this is a great way to understand just the depth of expertise that you can engage with as an affiliate member within the technical communities and also widen your own network of quality expertise to help bring some of these topics more to doable or more of a real-life aspect for you to engage with.

4:59
So again, here's the topic of at hand today, and we're going to get into this in just a few minutes.

5:05
But really, when we think about quality's impact in technology today, we're really going to focus more on the inner artificial intelligence, the machine learning, and the virtual reality aspects of technology.

5:16
Now I will just say we're going to be scratching the surface of this topic because this is such a wide and huge threats of a topic to explore correctly.

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But as you start thinking about the things that not only the subject matter experts are going to be talking about and also the data points that we're going to be sharing with you all, think about how this might look for your own organization.

5:37
So in today's webinar, how we're going to structure this is that we're going to talk about IoE focused study data points.

5:44
The panel's going to weigh in with their own expertise and things that they see on their end from a real-world aspect.

5:52
Then we're also, if we have time today, we're going to open it up for a bit of live Q&A.

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What that means is that you can chat in, or you can put your questions into the Zoom chat as we go, and our team's going to be collecting that on the back end.

6:04
And like I said, if we have some time at the end, we'll have our panels weigh in on that, but we'll be sure to have a summary of next steps and other ways that you can engage as we go forward.

6:14
So pretty simple, but we're going to get into, I think, a lot of great discussion today about a few key things.

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All right, so with our first reason why we're talking about this today, and as I mentioned, we're going to really going to scratch the surface before I turn it over to the panelists and introduce them.

6:32
I just want to take a few moments and just really explain why as a team, we chose this topic.

6:38
So IoE research has been around since 2020.

6:41
It's really been a labor of love here on the ASQE side because we had to start from scratch and build a benchmarking tool that gives organizations 9 different categories of benchmarking performance for their operations, their strategy, their workforce and so on.

6:57
And what's interesting to our team, when we look at this data year over year that we're collecting not only through the organizational members themselves that are participating in benchmarking season, but also when we go to field this research with our Forbes Insights business partner, we're seeing persistent challenges that keep arising year over year over year.

7:18
And this is actually from our operations category.

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And this graph is in our IoE focus study, which is on this topic today and which is something that you'll have access to as well.

7:30
What this graph is showing is that the why persists for technology and quality to meet and to and for quality to actually drive technology forward.

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So when we take a look here, when, when in 2020, we didn't know COVID was going to happen, we'd actually just started our research efforts.

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And then lo and behold, the whole world was brought to us a halt based on the COVID pandemic.

7:54
And really when we think about that, that is what forced the hand of many companies who might not have been digitally forward to suddenly become digitally forward.

8:03
So when we take a look at this data, we can see jumps, we can see how suddenly technology issues became a thing, you know, but maybe that a company was thinking, oh, we should probably get around to that at some point.

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But when COVID happened and when it burst open on the scenes and workforces suddenly had to go remote or other certain things happened, that's probably where a lot of gaps suddenly rushed forward.

8:27
So when we think about how also these things are interrelated, we see that year over year, especially like information technology shortfalls such as buggy software remains one of those top issues.

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And you're actually seeing this in priority order the way it was reported to us.

8:42
But very close behind that we see online and digital security vulnerabilities and things like that now make the news in the news cycle.

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We've seen very public, you know, information about data breaches and other sorts of vulnerabilities that companies need to start addressing.

9:00
But let's take a look at those 3 next items on the list here, Employee competence for future needs.

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That actually ties in extremely heavily to what I just said with the cyber security and the vulnerability piece.

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It could also tie into the buggy software or the technology shortfalls.

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So if we have maybe employees that aren't trained properly or that they don't understand how these things interconnect, that could be really creating a vicious cycle and might be why an organization continues to struggle.

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And then the last two things on the list here, we see our subpar customer experience online as well as an employee experience online.

9:34
And if we think back to COVID when it forced a lot of us to go remotely, if you suddenly have a very vast remote workforce, but there aren't ways for them to successfully engage with customers, meaning the customer can't get online easily or can't transact online or for them as an employee, they can't find maybe an intranet of, of information that can support them and their needs.

9:56
Well, then this all kind of folds into that whole IT eco ecosystem of we've got some issues that are reoccurring.

10:02
So we're going to talk about these things actually today.

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So when we go into the next couple of slides worth of data, we're actually going to have our experts weigh in on their, from their experience especially and how we'd like take into consideration the quality aspect into making some of these things better.

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And, you know, if we think about things that have just happened to also to our own society in the last couple of years, ChatGPT suddenly burst onto the scene in late 2022.

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And then we've also experienced the recent crowd strike security patch debacle, which took down airlines and basically ground the world to a halt.

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So we are more than ever dependent on technology.

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And we also, conversely, have to look at that as from an organizational standpoint, what does this look like in our own day-to-day operations?

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Are we adequately thinking about these risks?

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Are we adequately training?

10:52
So keep these things in mind as we go forward because if we're going to start implementing things like AI or we already have been, but we're struggling, these types of things are probably feeding into why we continue to have these issues or where we could actually start using quality methodologies to help shore up those gaps.

11:09
So now I'm really excited that we are going to introduce our ASQ subject matter experts.

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We do have, I know that there's one of the experts that might be a little bit delayed coming on, but we'll still get started with the two that we have with us right now.

11:23
I'm going to introduce them all and then we're going to get started into our panel discussion.

11:28
So first off, I'm very pleased to introduce to you all Doctor Rhonda Farrell.

11:33
She is CEO and transformation strategist of Global Innovation strategies.

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She's a pro sci change practitioner as well as she holds multiple certifications as you can see here.

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She's also a safe agilest, which is also a very interesting thing in the technology world.

11:48
She's a digital transformation strategy and innovation leader with broad experience aligning to multiple different types of domains and different types of specialties as well as chief of staff, enterprise initiatives.

12:00
And Rhonda uses a collaborative approach to consistently identify strategic gaps, better align missions to execution, as well as re-engineering teams.

12:09
And she also has a vast amount of experience in organization, communications processes, and technological infrastructure to maximize those capabilities.

12:17
And she's been a great partner of ours now for several years on the IoE side.

12:20
So we thank Rhonda for joining us today.

12:24
Austin Lin is someone who he has been also in the ASQ ecosystem for many, many years.

12:30
I'll come back to Austin.

12:31
He's actually having some connection, connection issues right now getting onto the panel, but hopefully we'll be able to bring him in today and we'll be able to hear from him.

12:41
But those of you who have not yet met him, he is an ASQ fellow.

12:44
He's also the past chair of ASQ and his current work today is he's actually working with standards development in quantum technologies.

12:52
So he's got a lot of experience around this too and hopefully we can get him as part of this discussion today.

12:58
And last but not least, I have Sheila Shaffie with us today, which I'm really excited about.

13:02
Sheila has been a very important person as far as developing new divisions with ASQ.

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So she's actually a Co-founder of our newest division, which is the financial services division.

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She's also a Co-founder of Process Arc, her company, and also a certified Lean Six Sigma Master Black Belt.

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She has been working in this space for a very long time as well, especially from an automation and CX piece or, or viewpoint, I should say.

13:28
She's helped clients discover their potential for growth and efficiency by taking a deep look at business processes.

13:34
And just some of her clients that she's worked with are Thomson Reuters, U.S.

13:38
Bank, Northwestern Mutual, Charles Schwab.

13:41
So definitely heavy in the financial sector, but she's got a lot of great information that can apply for any industry.

13:48
Sheila also holds an MBA from the University of Chicago and a bachelor's degree action in chemical engineering.

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And she's published a book as well.

13:54
So welcome to Sheila as well.

13:57
And we're going to get started.

14:00
All right.

14:01
So let's talk about this first data point.

14:05
So when this and this is from that focus study that I mentioned.

14:08
So this is actually from the focus study that is directly tied to the technology and quality connection.

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And when we take a look at this slide, we're seeing, or actually we asked the question for our respondents of how effective do they feel their organization is that in using big data to address customer needs.

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And this is kind of a maybe a tricky question because a lot of times when we think about the definition of big data, we might have a lot of different ideas of what that means.

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But what we see here and what you see on the left of your screen is the graph that shows basically the overall aggregate of agree down to disagree.

14:46
Now the good news is we see that a large chunk, 84% say that yeah, we, we agree, but the devil's in the details, right?

14:54
So if we go in a little bit deeper and we take a look, we see that really only 32% of all respondents completely agreed, meaning that 68% Fielder organizations could improve on utilizing big data to address customer needs.

15:09
And when we think about this too, when we did a deeper slice into the data, we saw that the disagree actually for North Americans actually was even higher than what we saw as the average and that 19% of our North American respondents disagree that they do have a big data-driven organization.

15:28
And this is especially when it comes to those customer needs, right.

15:31
So when we're thinking about being predictive, being able to anticipate things that happen.

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What's interesting though, is that that was a big delta between the European respondents.

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They're only at 11% and they're actually, you know, more in line with like what we see as far as the average.

15:46
So when we pose this question, we, we want to really understand what it means to effectively use that big data.

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And I'm, I'm seeing that I think Austin has been able to join us, if that's correct.

15:55
So, Austin, if you're able to come off of mute, I'd love to actually throw this question to you first, especially given your background.

16:03
And what I'd love for you to weigh in on, especially on what you contributed to this study is that since big data is really a huge part of what you work on a daily basis, I wanted to kind of just get your first reaction to,

are you surprised with these level of agreements or what do you think these regions or the reasons are maybe for those regional variations I spoke to?

16:22
Yeah, thank.

16:22
Thanks.

16:24
Yeah, absolutely.

16:24
I, I think where I think the term big data when it was sort of in its jargon infancy in say the 90s or 2000s has taken on a different meaning in modern times.

16:37
I think even if one doesn't consider themselves or their small business and big data company in, in effect, we're all connected because of the underlying fabric of data that connects multiple businesses.

16:48
So even if you're a small business that uses say Shopify to, to manage online sales or you are on social media, how that how you are connected to your potential clients and your existing customers is through this fabric of data.

17:03
So we're all participating in this ecosystem now.

17:07
And it's not just a buzzword in sort of the academic journals.

17:11
It's something that really sort of moves the current economy as we understand it today.

17:15
And I think the bigger question is whether you identify as a big data company or not, it’s how can industry or society make the best use of the data that is out there.

17:27
And from the perspective of quantum computing, 1 area that I'm active in now, it's looking at what are the capabilities we have today in classical computing versus newer computing technologies on what can be solved with today's technologies and what perhaps is intractable to today's technologies because data is so prevalent and so omnipresent.

17:48
No, thank you for that.

17:49
And I, I wasn't able to go in deep with your bio, but you, but you definitely are on the forefront of really building some of these standards around that quantum computing piece.

17:59
So when you think about what you're seeing as far as standards development, can you talk a little bit about

maybe some of the challenges you're seeing in people grasping what this what this means in order to effectively guide forward?

18:11
Yeah, I, I think it's, it's a few levels deep right now.

18:14
Quantum computing as an industry is still emerging.

18:17
The idea of quantum computing is not new.

18:19
And quantum mechanics as a discipline celebrates its 100th birthday in 2025 as the discovery quantum.

18:27
So the ideas are not new by any means, but the applications and making them sort of where it matters outside of an academic paper.

18:35
And it's starting to make a difference out in the real world that is just now starting to come into being.

18:41
And we see lots of smaller quantum startups, some that were started in a lab now at that inflection point, which many people in this audience are familiar with.

18:49
In that, you know, you're going from a smaller business concept where your business has invested some amount of financial commitments and you want to scale that to a broader, you know, broader audience.

19:03
And that's sort of the role of data right now in quantum computing, which is what is out there that can be standardized in a way that could most positively infect the quantum economy and understanding what needs to be.

19:18
And a lot of it today is reliant on non-quantum or what we would largely say classical systems, which is everything that you would call a computer today.

19:27
So you have all this data generation, you have problems that can be very reliably solved using today's technologies.

19:33
I'm at what point does the amount of data that you need?

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So let's say simulation of even a very basic molecule, safer drug discovery.

19:42
Those are very, very hard problems for a classical computer to take.

19:46
So to solve the problem, you actually need more data to do that.

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And so from a standards community point of view, it's, you know, really talking to companies, startups, mid-tier even, you know, sort of the divisions of large multinationals.

20:01
To look at, you know, what stage of that journey are you in, what information right now can help you scale that part of your supply chain, particularly if you're a quantum company and then looking for applications of quantum outside of what is becoming a quantum industry.

20:18
Yeah, excellent.

20:18
Well, thank you for that.

20:19
And I know that we could spend so much time on that alone, but hopefully this is giving everybody kind of a taste on just how complex something like this when we ask this question to our respondents, what this might actually mean underneath that, it's really that iceberg effect.

20:32
So Sheila, I'm going to go to you next because I know when you were taking a look at this data, your thought basis was really kind of more about thinking about the companies that actually do this.

20:42
Well, from the start they were, they were actually they had a big data mindset in the beginning.

20:47
But when we think about companies that might be around for, you know, we call them like Weber legacy type brands or people that have been around for some time, especially in the work that you've done with your clients.

20:56
How are you thinking about this question when asked about how a successful or effective big data is being used out there in the wild?

21:04
For sure.

21:05
So you made a statement earlier on around big data and the fact that it means different things to different organization.

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And I think the definition of it has morphed quite a bit over the past few years.

21:19
And so I'm, I love Austin's comment that we are living in a data ecosystem, that we're all in some way contributing to the generation of this data.

21:28
But I think what becomes quite challenging for organizations that are not data companies like Google and Facebook and Amazon, because for them products is secondary.

21:39
They're primarily a data company.

21:42
So for all the legacy organizations becoming, getting to a point where they can use data in a way in the original intention of big data, which is to help them predict behaviors, risks, preferences, is quite challenging.

21:59
Because at the at a foundational level, big data assumes that you have access to reliable, accurate data that's labeled correctly and stored in a way that allows you to use it when you need to use it.

22:16
And the issue is compounded by the fact that we have legacy systems on one side.

22:22
And then because of the introduction of low code platforms and the development of applications, you have a lot of proliferations of applications and organizations that are sitting in silos.

22:36
And so the data is sitting in silos.

22:37
And then with legacy systems, you can't even get to them at all.

22:41
So you know, I think, I think for organizations there's like a tactical approach and a strategic approach that they can take.

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On a tactical level, you just have to start.

22:51
There is no easy place to go.

22:53
But wherever organizations feel that they have access to some level of data, you just have to start.

22:59
You have to start playing with it, developing ideas around what insights you want to gain from it and just go for it.

23:05
And in that process, you begin to learn what you need to actually develop a much larger data strategy.

23:12
And on a strategic level, I would, you know, I think that organizations have to start thinking about I pass, which is the integration platforms as a service in order to start putting the plumbing.

23:25
I will put IT plumbing behind their IT infrastructure so that they can start organizing the data the way they need to, storing it in a way that they need to, and ultimately overcome the legacy challenge and start connecting on premise, on cloud, whatever.

23:43
Wherever the data is, wherever the applications are, connect them in a way so that they can actually start getting to the data because without it, there is no big data strategy.

23:53
Yeah, I think that was really, really well articulated.

23:55
So thank you for that.

23:56
Because I think that there's maybe this fear that they have to do all these things first, which in a way might be somewhat true.

24:03
But also like you're saying, we have to just get started too and start digging in.

24:07
And, and that's also where I think the rubber meets the road, right?

24:09
You Start learning quickly about what you need to clean up and how this all works together.

24:14
And so Rhonda, I, I want to turn now to you because I think you had something really appreciate in your feedback that you gave us was actually that when we think about big data, we might not realize that that also opens the door for more vulnerability and especially when we think about the Internet of Things.

24:28
So I'm hoping that you can expand on that a little bit based on kind of how Austin and Sheila have framed this so far.

24:33
Yes, thank you.

24:34
So I think you're right.

24:35
Whenever we have a data store, especially if it's something what we call the Kings to the Kingdom from a cybersecurity standpoint, right, we want to ensure that we are protecting that from a confidentiality, integrity and an availability standpoint because it can then if compromised, open the door to operational and functional as well as legal heightened risk to the organization.

25:03
And so we look at this in a kind of a faceted approach, right?

25:07
Not only how are we storing and protecting the data, but how are we sharing that internally as well as how we're sharing that externally.

25:18

And that brings to bear a lot of cybersecurity control frameworks around identity access controls, other data level protections and the technologies that undergird that.

25:33
But I think it also opens the door for us to understand from a broader governance risk and compliance standpoint, what we need to be thinking about as we go about implementing big data technologies as well as initiatives within and throughout or organizations.

25:54
Especially in the case as Austin and Sheila mentioned, they're often used to drive insights and Dr.

26:03
exponential opportunities both for revenue, value and impact across our partner base, our client base, and our customers.

26:10
And so we have to be very specific in the way that we approach the cybersecurity controls frameworks and methodology so as to protect and be able to meld that with usability.

26:25
So I think we have an opportunity to look at it from the people aspect, which I think you'll dive into.

26:31
But we'll that's often times looking at how we can create awareness and engagement and adoption and application at each level of our workforce.

26:43
We look at engagement as to what are they experiencing within their particular roles and responsibilities.

26:51
How does that inform personas?

26:54
How does that inform roles?

26:57
How does that inform perhaps a career journey ensuring that we're including that and then knowledge reinforcement skills and ability, right.

27:07
And I think you'll touch upon that later, but all of those are factors that we have to consider within this big data AIML and VR recipe for success that so many are launching within their organizations.

27:21
Yeah.

27:21
And that was a perfect tee up for kind of the next couple slides we're going to go into.

27:25
And, and I'm really glad that you made that connection, Rhonda, because people on the call might be wondering why are we starting with the topic of big data?

27:32

And it's like, well, you can't effectively have an artificial intelligence output without effective data being the foundation behind it.

27:40
We also know that artificial intelligence can hallucinate or can make stuff up.

27:45
And this might also then be even more complicated if it has bad data to start with coming in, right?

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So think of it as like garbage in, garbage out.

27:52
So when that might be oversimplifying the output of it.

27:57
But the core concept of it is very real.

27:59
And so that's why we wanted to start with big data first, just to really give kind of a level set out there of what we're looking at when we say terms like AI, ML, and VR.

28:09
And these are these are all dependent upon a good data hygiene and good data structure and management of that data.

28:17
So yeah, as Rhonda mentioned, let's go forward and talk a little bit more about this.

28:19
So when we think about the common barriers that we're seeing too.

28:22
So again, we're, we're only going to scratch the surface of what our focus study was able to feature just because of the time that we have together today.

28:29
But this is something I really wanted to make sure that we brought forward into the discussion too.

28:33
And when we think about the factors that prevent potentially effective implementation of digital transformation or industry 4.0 and, and, and, you know, AI and machine learning are at the, you know, they're really embedded within the industry 4 dot O concepts and, and things that have to take place in order to be classified as such.

28:53
These are the recurring top challenges that keep bubbling up.

28:57
So very similar to the, you know, the, the other slide that I showed you where we say we're seeing these things year over year, you know, the story's not changing.

29:05
It's very similar to when we're showing you this data, right?

29:08
So these are the top concerns that were reported as being the most frequent barriers that organizations are experiencing.

29:16
At the very top of the list is outdated infrastructure and systems.

29:19
You know, we just heard Sheila kind of mentioned a bit about that and then Rhonda touched on the cybersecurity piece.

29:24
But also, we see that shortage of digital skills is right up there.

29:28
Now.

29:29
Austin had talked about this a little bit too, because this is something that, you know, is coming up in the standards development as well.

29:34
Like when we think about how deep do people's now skill sets have to range when we're thinking about these types of things.

29:41
But one thing that's also on the list too is just out resistance to adopt the new technology.

29:46
Now, when we say resistance, that could be that we don't feel ready for it yet or maybe as all of our panelists have talked about, there's also a lot of other stuff, there's other fire burning that we have to address first.

29:58
But I want to make sure we get into this a little bit and talk more about why some of these common barriers might be so prevalent and also maybe where the understanding might be a little fuzzy as to what these things actually mean.

30:09
So Sheila, I'm going to go back to you just because when we're thinking about the newness of tech, to me, these factors seem all a little bit related to some degree.

30:19
And I'm just wondering if you can explore some of these factors that you see in your work with clients, especially around that outdated infrastructure piece, and maybe how you're able to help them overcome some of these barriers.

30:30
You got it.

30:31
So let me just make a couple of general statements and one being that AI is really not one thing.

30:41
They're the domain of AI is comprised of so many different capabilities, generative AI being one of them, optical character recognition, machine learning, natural language processing.

30:53
So the domain is quite vast, which is probably why there is resistance within the organization because in order to kind of have a good appreciation of how to deploy these capabilities and get a good return on your investment, you have to know how to play with this new toolkit.

31:11
And, and it is new and it's constantly evolving, which adds to the frustration and the challenges of it.

31:19
But the other thing to kind of remember is that one of the greatest things about artificial intelligence is that it's supposed to help us overcome the challenges that we're experiencing with these legacy systems.

31:32
So if you think about AI as essentially trying to create a more intelligent organization, Dr.

31:40
efficiency, drive a better customer experience, it’s trying to actually resolve challenges in three very specific domains, which is orchestration across an enterprise, connectivity across an enterprise and also the experience that we provide to our employees and to our customers.

32:01
And different AI capabilities address these three specific challenges that organizations feel.

32:08
If you're the side that, listen, we're going to go all out for experience and efficiency, then you need to be focusing on very specific tools around robotic process automation and the low code application platforms like Microsoft, right?

32:22
So you can begin to play with OCRNLP and automation in general.

32:29
That's how you would leverage AI.

32:31
If you're thinking, hey, I really need to focus on connectivity, that's my initial domain of concentration.

32:37
Then you start thinking about I pass which I mentioned earlier on, which is the integration platforms as a service.

32:43
And so you may be thinking about IBM or Blue Me.

32:48
And then ultimately if you're thinking about orchestration, then your focus has to go around business process automation platforms like Oracle, Salesforce.

32:57
And I think IBM is in that space.

32:59
It identifies itself in that space as well.

33:02
So as long as you have a notion of where you want to start playing with AI, then you will start using certain tools heavier than others.

33:12
That gives you a sense of an opportunity to deliver efficiency, improved experience, improved data flow, which then allows you to gain confidence.

33:23
And then slowly you start building around that and a lot of the resistance will fall apart, hopefully in time, and you will also begin to build some of these capabilities that you need in an organization in order to become self-sufficient.

33:38
So it seems overwhelming, but it's there are certainly tons of tools and companies to choose from in order to start your journey.

33:47
Yeah, I think you articulated that really nicely.

33:49
Thank you.

33:49
And I, I think a lot of times maybe we get analysis paralysis too.

33:53
Like if we start thinking about all the things that we have to accomplish, it can be really hard to prioritize or boil down to the to really what it is we're looking to accomplish.

34:02
So thank you for all of that.

34:04
And Austin, I do want to go back to you because I in, in the feedback you had given us too.

34:09
I think you made some really excellent points about, again, those infrastructures or the system's thinking approach and thinking about those ways of like, as Sheila kind of mentioned, it's like, what are you looking to achieve?

34:20
What are you looking to solve?

34:21
How do, how do you in a way back yourself up a little bit to kind of starting to know where to start?

34:25
Do you have advice for the group on that?

34:29
Yeah, I think some that are very apropos for this audience, in particular with ASQ and ASQE is, you know, one of the core competencies of quality professionals is designing for an end result.

34:42
So designed for manufacturability, designed for X.

34:47
So I think more and more of that is going to weigh more heavily.

34:51
It's always been heavily, if you've been a quality professional and sort of talking across functions and talking to finance and funding and talking to your capital teams, I think that's a big part of the conversation.

35:00
And I think as technology evolves, that kind of manifests in a couple different ways.

35:05
If you look at companies that are in sort of the primary, the data center business, it's kind of the same struggle with infrastructure, not just for outdated infrastructure, but what infrastructure to invest in the Capex for.

35:17
These are super, super high amounts of investment.

35:21
And so the runways for your ROI and also justifying the spend and the timeline you will see that first drop of ROI are always on people's minds.

35:31
So when you are bringing your proposals in front of you, your CFO or your, your, your, your treasury group, those are questions key on their mind.

35:40
So I think there's the just a natural question, where do you invest capital and pay more attention to know that the pace of technology as it evolves, How can you how can you do your best to predict what infrastructure you need that can be most adaptable in this future?

35:57
That can't hasn't really been seen.

36:00
And in the standards world, the this joint ISO IEC group also had its first technical committee.

36:07
It's very first joint committee was formed in 1987 for this new and emerging new field called information technology.

36:15
And you know, it's hard to keep up with your 1887 to see what's possible in 2024.

36:21
And I think that's really one of the big challenges in technology and if you were a client of technology to understand where to invest.

36:27
So that's the infrastructure piece.

36:29
I think financially.

36:30
I think it also looks at where the source of that investment comes from to decide do I use it to upgrade infrastructure or do I buy something new from scratch.

36:39
And again, using an example from the quantum computing, quantum technology world right now, the price entry is still quite high because a lot of infrastructure costs are in there.

36:47
When you are building, say if you are not looking at quantum components but you are setting out to build a quantum computer, it's a very, very high cost of entry just because it's unknown and there are not a lot of standards there.

36:59
If you look at the source of funding right now overall globally, McKenzie did this great research study last year looking at 2020, looking at the trends in 2023 and global investment in start-ups overall dropped by almost 40%.

37:15
And within that quantum was about 25, I think 27 percent or so.

37:19
So private investment has decreased, but if you look at where it will, the some of yours are still growing.

37:26
So where's the investment coming from?

37:28
When they looked at across global public investment, so national sources of funding, federal funding, public funding, there was a global commitment of about $40 billion / 10 years.

37:40
And so if you break that down, if you divide by 10 and look like what the year by year is, it's around $2 billion versus a little bit over $1 billion specifically to Quantum.

37:51
And so you're getting almost 2 XD investment from, you know, public sources.

37:54
And so that means, you know, you, you have your own company stakeholders to be to answer to, but now there's a sense of sort of public duty because of the source of all this external funding that's happening as well.

38:06
And so just having that dialogue on how being good stewards of the investment when you receive it, how it's applied in a broader context.

38:14
And you know what, what end user and what intermediary user are you trying to serve when you are making these investment decisions?

38:23
So it's gotten more complicated when you're weighing all of the dollar values of these things to, you know, this one piece of infrastructure technology that you want to put into an understanding that you want it to not just last but be adaptable to all the other things that are still unpredictable.

38:41
Yeah, I think those are really good points.

38:42
And you know, when we think about a lot of times when we think about business investment, a lot of times we think about physical things, right?

38:50
We think about infrastructure or, or what we considered infrastructure for years, which was the built environment, or which was hardware.

38:56
So you know, that type of stuff.

38:58
But now, you know, Wi-Fi is considered an infrastructure.

39:02
You know, broadband Internet, for example, across the nation is, is something that a lot of people did not have access to for many years unless you were in a major metropolitan area.

39:10
And in order to do business or keep up or have competitive advantage, you need to start accounting for these things.

39:14
And I would also argue that the shortage of digital skills falls within that infrastructure piece now, because you have to have people who know how to do these things.

39:21
So Rhonda, I'm going to tee this back over to you because you had touched on the digital skill thing in the last slide that we were talking about.

39:28
But based on looking at it in regard to the outdated infrastructure piece or that shortage of digital skills, especially like when you think about quality's role in helping with that, what comes to mind for you to help employees develop those specialized skills?

39:43
Thank you so much.

39:43
So yes, just rounding out kind of the conversation then we'll go to the digital skills is, is really about the understanding from a change management and innovation management perspective, the organization's readiness capabilities with regard to adopting these new technologies, right.

40:00
And people process and their technological infrastructure writ large all have a, a part to play in that as in readiness.

40:08
We also have to look at what are the top industries that are currently leveraging AIMLBR, what is the maturation rate of those industries and then how are they going to?

40:20
Leverage and adopt and utilize these different technologies, right?

40:24
So we have manufacturing from a readiness perspective, probably extremely mature, able to from a quality control perspective, use it for predictive maintenance, process automation, quality control, looking at it for overall innovation and expansion of their product and service lines as well as internal purposes as well as training their workers.

40:56
So going to that digital skills perspective, we're going to see where these technologies in that particular realm are going to be training their workers and their staff on design simulations on manufacturing infrastructure technology, process improvements.

41:14
They may be from I think Sheila and Austin's standpoint, from design thinking perspective, be able to take them from concept to fielding from a personnel standpoint.

41:26
So maybe that's career journey mapping with regard to these technologies.

41:30
Maybe that's SO PS maybe that's automation of previously partially manual process flows.

41:38
Maybe that's the implementation of new manufacturing infrastructures that harness all of these different technology components.

41:46
And then we need to look at it from a, a particular role or persona basis how we can amplify their learning.

41:52
Is that courses, is that practical application?

41:55
Is that simulations of some way shape or form?

42:00
Then we have healthcare where we're going to be looking at diagnostics training, surgical simulations, and patient rehabilitation, right?

42:10
So it's going to be part concept, part scenarios from probably technologically enabled, especially in that our realm, right scenario training to get them ready for these different types of surgeries, care for patients, perhaps early stage patient conditioning so that they get familiar with and then can amplify their response capabilities should something occur.

42:39
Same with automotive, retail and e-commerce and aerospace and defense, right?

42:44
We look at how we're going to create autonomous systems, predictive maintenance, supply chain optimization, and then really focus on simulations planning and then a computer-controlled person ecosystem much that ML and virtual reality combined supply.

43:11
So that's based on their responsiveness.

43:14
They get increasingly more difficult scenarios to solve and advance through given whatever their education or career journey is, given their role.

43:30
So I think there's lots of opportunity here both with how we plan and advance education and training within the organization as well as the process improvements we can use with AI and ML to amplify our training scenarios.

43:48
And lastly, the technological not only at we're training to the new technologies, we're using the technologies to train within these very important industry segments how quality and innovation can exponentially enhance mission outcomes across those segments.

44:08
Yeah, thank you.

44:09
And that you know, if you think about it, what you just articulated, it really means that everyone is impacted.

44:14
It's not that there's only going to be a certain couple of industries or roles in a company that feel this, it's going to be everybody and it's more of the question.

44:22
And we pose this also in the IoE focus study.

44:24
When we think about this from a workforce standpoint, it's not if the technology is going to impact me, it's how, right.

44:31
So I think that's also a mindset shift.

44:33
We need to especially have leaders be comfortable with to also get their workforce comfortable with is that yes, this will be a part of our day-to-day and how do we continually adapt.

44:42
So let's talk more.

44:43
So this is our last data slide and we're going to dive in a little bit more about these are the actual skills that were reported by our respondents of saying in the next three years.

44:53
So when we polled our respondents, we asked them what is the following technical skill set that is most relevant to the needs of your organization over the next three years?

45:01
And overwhelmingly, we see at the top, big data and analytics are right up there, as well as the AI machine learning piece.

45:09
And then close behind are the pieces of cybersecurity simulation and then also that augmented virtual reality mix.

45:16
And Rhonda, you actually just touched on quite a bit of this already.

45:18
And, but when we think about these, these all truly do stack together, but big data still rises to the top as being one of the main focal points.

45:27
And, and you know, if you think about it, this is also, we're in an era of rapid change.

45:32
It's, it's only going to get faster, which I know is overwhelming to many people.

45:35
And I understand that.

45:36
But I think if we take a step back and we understand that quality does help us get that landscape, get that big picture, it's more about the how do we use quality in a way that helps us pivot in the right direction?

45:50
So Rhonda, I'm going to kick it actually back to you to kind of start this.

45:53
So when you think about these top skills needed are there, you know, if you think about how do you would you prioritize a way to tackle this?

46:01
Do you have a recommendation?

46:02
If a company can't hire new staff, how would they look at their existing skills or their existing staff and start moving them in this direction?

46:13
Thank you, Erin.

46:13
So yes, I, I think it's really going to depend on the view, the lens through which it's looked at, right?

46:20
If you're going to be, if we just look at what's rising to the top of the issues and challenges within the world's right large right now, we're going to see cybersecurity is key, right?

46:31
So we're going to need to understand through the Nexus of cybersecurity, what play does AI and machine learning have?

46:38
What play does big data and analytics have?

46:40
And we can look at it through predictive threat detection and prevention, real time incident response and automation, enhanced decision making and date through data analytics, Strengthen cybersecurity through AI, enhanced behavioral analytics, operational efficiencies and resource optimization, AI powered vulnerability management and patch automation, advanced AI driven simulation and pen testing and then threat intelligence sharing and collaboration.

47:13
What is at the core of that in all regards is people implementing process and technology changes.

47:25
And so what we really have to do is go back to our quality skills that you and Austin and Sheila have dug deep in this area with regard to design thinking, system thinking using an agile and a lean approach.

47:39
And we, and in often times that we see, especially in those five major industries that we talked about, we use Kaizen events, right, to basically go back to root cause.

47:50
And so if we look at the roots of really causal analysis and scenarios, we can see how I'll look at it through the lens of cybersecurity, right?

48:01
We're going to be taking a, a, a set of events that occurred the symptoms that we can find.

48:11
Then we're going to go back and do a very robust causal analysis using auditing audit logs.

48:17
We're going to be using multiple technologies to do a security event scenario.

48:22
We're going to go back to our basic confidentiality, integrity, availability construct to understand where were the capability gaps from a technological process and a people standpoint.

48:37

And again, how are we then going to be able to drive further resiliency, so we don't get those same outcomes as through thinking that through that 8-pronged approach from cybersecurity.

48:49
So say we want to get better at threat intelligence sharing and collaboration so that we don't that our organization does not have to repeat the same security event that another organization already experienced, right.

49:03
So that's going to mean creating a, an educational basis from a thought leadership perspective within their organization.

49:13
So Sisos are going to work with their authoring authorizing officials, which are going to work with their ISOs and issues, which are going to work with their cybersecurity control assessors, which is going to hopefully be working across the workforce to understand awareness engagement, application of our best practices of cybersecurity as well as our control frameworks.

49:35
And then we're going to use our constructs such as the OWAS top 20 and other things that Google, Amazon, Oracle, other cloud providers, etcetera and technological cybersecurity, technological manufacturers, products and services are to basically ensure that our organizations are secure from a managed security services perspective on the endpoints on our laptops, on our enterprise infrastructure with our within our partners And last but not least would be through our supply chain.

50:11
So we have to drive awareness through different types of education at the university, internal with our service providers and product providers, as well as again, harnessing MLAI and BR for the scenario analysis that it does.

50:28
So that we ensure we're covered down on these eight important factors of cybersecurity, harnessing AI and ML, as well as big data and analytics.

50:38
So we, we one last thing is really we have to measure the outcomes we're attempting to seek so that we can create the proper training baseline so that we can then improve not only our skill level, but our outcome and results levels as well within our organizations.

51:01
Yeah, excellent.

51:02
No, I appreciate that.

51:03
And Sheila, you know, kind of to give one last thought here around the work that you've done, is there one skill in particular that you've seen rise to the top over and over that maybe leaders don't understand as much what their workforce is in need of?

51:16
I think it may be music to the attendees’ ears, but it honestly, it's critical thinking and problem solving.

51:24
It's unbelievable how often it's overlooked.

51:26
Everyone thinks that the elixir to all of our ALS is going to be technology, but the reality is that unless you know what it is that you're trying to solve for and have enough of an understanding of the capabilities that are available to you, what we're going to end up doing is building garbage.

51:45
And that's what we continuously see.

51:46
As, you know, as we implement AI solutions, we notice that they get so enamored of the AI capability itself that they, you know, businesses forget what is it exactly that I'm trying to work out of my business or implement to enhance the experience or the efficiency for the organization.

52:03
So critical thinking for me is top of mind.

52:07
Everything else you can build or buy essentially the, you know, the analytics and the machine learning capabilities.

52:14
That's a really good point.

52:15
Thank you.

52:15
And actually you said something in what you just mentioned that I think Austin, you put really I think eloquently in the response you gave us within the focus study was you touched on the hype versus responsibility piece.

52:26
So I'm wondering if maybe that's bringing through when you look at this slide to seeing like what's actually at the end of the day needed like Sheila was saying.

52:33
So I'm wondering if you could just add a few words here to kind of round the slide out.

52:39
Yeah.

52:40
I, I, I think balancing the promise of a new technology or even if you are pitching a new direction within your organization of something new and shiny that's going to solve the specific problem to balance what the timeline of delivering that in a robust way is versus what actual reality is capable of doing.

52:59
So I think that's, that's, I think a, a big call for responsibility in terms of selecting which technologies to pursue on to the point of, you know, how do you prepare a workforce for that and to navigate these, you know, how to distinguish between what is type, what is reality.

53:15
I think the one sentence answer of what to learn is get really good at learning how to learn.

53:20
I, I think it's impossible to say if you invest entirely in technology X today that that discipline, the, the depth of expertise in that one area is going to be the same five years from now or 10 years from now.

53:36
I think in previous iterations of the industrial landscape that may have been true, but that will increasingly get less and less true.

53:43
So where you know, the, the skillful, the skills of the workforce have to be able to disassociate from anyone particular thing, but think about it as a process of things and how those things adapt to what the needs of society or business or industry or enterprise calls for.

54:01
So that's probably the most important thing is to prepare a workforce to be able to think in ambiguous environments, because even if you don't consider yourself a technology company, technology will be happening in or around you or to you.

54:14
And so to navigate that effectively is a big part of that.

54:17
And if you have a, you know, within an organization, you know some directly applicable things.

54:23
I one of my favorite diagrams ever is from this 2009 Los Alamos Labs study where they created this map of science where they cited all of these academic journals, and each time 1 academic journal cited another academic journal that was not in the same discipline.

54:40
They connected the dots and what you see is you sort of see like this cloud of knowledge where you see, you know, chemists, analytical chemists cited a lot of physical chemistry and physical chemistry cited a lot of biological chemistry, which all made sense.

54:54
What was interesting is when the one chemistry journal sites a social psychology paper or, or a, or, or an industrial economist, you know, sites a math paper or a child psychology paper.

55:07
And what you see is these sort of thin lines that connect disparate bodies of knowledge, which traditionally are silos.

55:13
And if we can find ways and organizations to break some of those boundaries, I, I think it's really promising for adapting to new things.

55:21
You know, have your quality person sit in on a finance review, take your shop floor mechanic and have them sit in on an engineering review, take your engineering lead and have them work the shipping dock for a week.

55:32
I mean, there's a lot of this knowledge that, you know, the knowledge itself doesn't know any boundaries.

55:36
These were sort of like things that we've siloed ourselves and put in job titles.

55:41
But I think to create this organization that can be really adaptive at a high level, it's to foster some sort of non-traditional lateral thinking like that.

55:49
Yeah, that's a great point.

55:50
Thank you.

55:51
All right.

55:52
Well, we are coming into time, so I want to be respectful of everyone's time.

55:56
If you do have a question that the panel didn't get to, please enter it in.

56:00
It looks like we're getting close to our time, but our, our, our organizational contacts can help follow up with you if there's something that the panel did not get to.

56:10
But I will say, all of the excellent feedback that our panelists gave us actually fed into this very robust resource document that I mentioned at the top of the hour that we have available for you in our ASQE events guide.

56:22
And that I'd highly recommend you take a look at that because all the things that Sheila, Rhonda, and Austin had talked about are in there.

56:30
Also, the focus study goes far in more depth with direct quotes from each of them on building out information around each of those data points.

56:38
So if you haven't yet downloaded the Focus study or if you haven't yet accessed that resource guide, I really recommend it since they've all three of them brought really valuable information forward for us to benefit from.

56:50
So we're going to go ahead and close out here.

56:52
So I just want to do a summary of the just really the key points that we talked about.

56:56
So again, this is a lot of this is found in that IoE focus study that our subject matter experts have all weighed in on.

57:02
But really when we think about this, if we're going to implement advanced technology, the need for effective data management is critical.

57:09
We also can use quality methodologies that might seem maybe a little bit basic to us, but they're second nature that really will optimize our processes first, which then those is we can better understand those systems that all three of our subject matter experts talked about.

57:23
And when we think also about that skill development, it's really critical to make sure that we are investing in that, but it also requires time to allow people to learn and to adapt.

57:32
The QR code is here if you haven't yet downloaded.

57:35
But really all of our IoE research is there for you to help further the quality industry.

57:40
These reports are free, so we recommend you use them, stack them.

57:44
They are meant to be used together.

57:47
But if you actually have any questions for us, we are more than welcome to help answer any of that.

57:52
I want to say that this conversation is not yet over.

57:55
As far as the year for the ASQ Excellence team, we do have one more event coming for all of you as organizational members.

58:02
We have our Excellence roundtable coming in November.

58:04
And the topic that we're going to be talking about is overcoming resistance with change management.

58:09
And I think all of you heard from all of our subject matter experts today that change management is really critical, right?

58:15
And we've got people who may be more scared of change, maybe they're rushing forward a little too quickly.

58:20
How do we effectively balance out those ends of the spectrum?

58:24
So we are going to be going in depth on this topic on how quality plays a role with that on November 7th.

58:29
And you're going to watch your inboxes for free invites to come.

58:32
And that's also free for all of you as organizational membership benefits as well.

58:37
So we'd love to see you there.

58:39
I do want to take a moment to acknowledge all three of our subject matter experts, Sheila, Rhonda, and Austin.

58:44
You've all been incredible to work with.

58:45
We thank you so much for all of you who are on the call today.

58:49
Thank you for spending some time with us.

58:51
We do have a survey for you to take in the spirit of continuous improvement.

58:55
We want to hear from you know what it is that you want to learn that we can help you further your skills upon.

59:01
So, and if you have any questions, by all means, please reach out to us.

59:04
So thank you all again.

59:06
Have a great rest of your day and we'll see you again at the next event.

59:10
Thank you.