

# Sustainable Product Development

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## SUMMARY KEYWORDS

sustainability, sustainable, organization, products, company, individual, research, dimension, aspect, stakeholders, goals, social, building, product development, economic, people, understanding, talk, invest, sustainable pace

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Good afternoon, everyone. My name is Charles Maddox with UNC PhD student at UNC, and me and my colleagues today are going to share with you our sustainable product development research project. And hope you you are, you hope you will enjoy a little introduction here. It's going to give a little background, an opportunity to have each of our research team members introduce themselves. Again, my name is Charles Maddox. I've been working as a in various capacities as an IT engineer, software engineer consultant over the last 25 years. More recently, I've been working in the Agile development space helping teams adopt better agile practices through DevOps and lean concepts. And I'm also to a student at the University of North Texas here in Denton, in the Information Science Department and are approaching using my PhD thesis areas are going to be an areas of sustainable product development, DedSec ops, and an agile development. Just kind of go from the top of the list our lead investigator on our project, and she's not a part of this webinar, but he is our our lead here and Dr. Victor private circuit, the dean and information department at UNC. He's a definite mentor on this project as well. But I'll turn it over to Dr. William said, and we can give a quick background on on him stuff.

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So I'm Wilson and I'm an assistant professor of Computer Information Systems. Tarleton State University. I got a PhD from u and T, and then college information as well. I have a pretty long history of software development as an architect, software developer turned architect, and then I lead teams. That's kind of me.

01:59

All right. Thanks, Doctor, CTO.

02:04

Okay, good afternoon, everybody. My name is GTO Mohammed. I have more than 20 years of experience working at Fortune 500 companies across multiple industries. I have successfully delivered several business critical and large scale digital transformation programs and projects. I'm certified in TMP CSS CSM PMI, ACP and SPC which is Safe Program Consultant. And currently I'm a doctoral student in the Information Science Department of the United faff the University of North Texas. And my research interests are software development methodologies, and in specific agile methodologies, and sustainable product development.

02:50

Alright, thanks secure. Well, I'll turn it over to Dr. Stan to get kind of give a background on our research project. And yeah, and we can go from there.

02:59

Awesome. So yeah, I'll talk about how Kim Ramsay this idea. So each of us has got a pretty long history, and involvement in dev and DevOps and project development, those types of things. I personally I you know, I've had experience in waterfall, iterative waterfall, agile, hybrid models, which are travesties and safe, which is kind of best in breed, I think, I still think that, but over the years, we've kind of looked at it individually and observed the results and impacts of the processes. And you know, who was impacted how the process were to learn that stuff. And in that process of kind of experience, we gained some intuitions and some insights into how things work and how they could work better. And that kind of drove us, each of us kind of won that agile path. But anyway, what we really wanted to do is understand at a deeper level, what was taking what was happening and how to how to make it better. So we have taken noted note over the years of sustainability efforts around the world. And just in general, these efforts kind of struck a chord you know, with us. The became sticky and society, you'll have seen, you'll notice that yourself, you've seen sustainable practices being touted in a variety of settings. And it's a persistent theme in organizations today, we have you know, the we have this idea, I guess that we want to be more sustainable. And that kind of led us into what we're looking at which what are we looking at the sustainability and technology? What is sustainability you might ask if you don't already know? Well, for one thing, there's not a lot of agreement on exactly what it is. But back in 1983, the UN put together a project with Brundtland called the Brundtland Commission, where they looked at sustainability in terms of human development and societal development called our common future. And in there, they said sustainable development is really this idea of meeting our own needs without compromising the ability of future generations. to meet their needs. So basically no robbing from Peter to pay Paul, it's like we're going to we're going to own the current situation we're not going to take, we're not going to borrow in the future. But for purposes of our discussion today, we view it as being a concept that has several dimensions. Handful of dimensions, actually, there's the economics of sustainability is how to keep businesses in business. That's, that's sort of our concern there. There's the individual dimension, how to keep individual participants of the firm as productive and satisfied as possible. We think, you know, there's this idea that if individuals are happy, and productive, that they'll just keep doing what they're doing, they'll be sustainable in that sense. And then there's the environmental concept or dimension, which is how we exist coexist with our surrounds the physical environment and such. And then another dimension would be the social dimension. This is how we maintain positive connections between the individual, the firm, the organization and the broader community. And then lastly, technical sustainability, which is, in a sense, is how to do sustainability. Well, the kind of the way that we looked at this, in prior years was in continuous and continuously improving our processes. So we want to do we want to be sustainable and will be maintainable and to become better at sustainable practices. Because that's kind of in a nutshell, Charles is going to kick us off with a discussion of the economic dimension in some detail. So take it back to you.

06:36

Alright, Thanks, Doctor. Well, so on the economic dimension, there's two aspects to consider. So one thing to also note at the beginning of this project, one thing that we've done so far is, you know, dug into a collection of some of the scholarly works already in this space to get an idea of what's been researched on. And, you know, what are some of the the kinds of future areas that we can kind of plug into that have not been explored thus far? So yeah, so from that literature, we, we've dug in, and we've got some concepts here, that that have kind of resonated with us that we are intending on exploring. So one of the economic aspects that popped up and allowed to be articles that have been out there is that making a decision to be a sustainable product development company may have some impact on performance goals of your organization, and your profit goals. So it's a shift, and, you know, it may be an area that is growing, you know, just like any other product development space or future, innovative space does not flourishing, and is not, you know, we're not fully into, for example, you know, almost like 90% electric cars on the road, for example, we're still getting there to invest in that is actually to potentially take a hit, and profits. And so organizations, how do you reconcile that, from an economic standpoint, to invest in sustainable products that are going to have an impact on sustainability and the industry? So that's one aspect to consider. And then with that said, what are the trade offs? What are the economic trade offs that organizations have to undergo? And to understand how much are we going to invest in certain product development aspects, versus continue developing, you know, investing in the current aspects, the current product initiatives that were extracting most of our value from? So the these investments, kind of investment horizons, if you will, that we invest in things of future, what we intend on seeing as future opportunities that we will be extracting value from in the future? But that's not kind of our core business model right now. How do we reconcile and, you know, allocate certain aspects of our allocate certain investment to these future initiatives in a way that there's a trade off there that's still sustainable, crypto economics, sustainable model for the company to continue pleasing. Its stockholders, you know, hiring and pleasing and being a pleasing environment for the workforce to work within. Right. So there's a decision to be made there. A lot of some of the research also, that's out there talking about either, are we okay, from an economic neutral or potentially negative relationship to our firm's economic success, you know, so there might be, you know, it's almost as if you're investing in maybe a nonprofit or it's almost almost in a way, I want to say charitable, but you get the gist of it. Sometimes you're actually maybe willing to take a hit, we're investing in something that's not going to profit, the company and, you know, be a betterment to society. And that's, again, a kind of a corporate vision that we might have that we are willing to take a negative on our profits, because we have a corporate vision that aligns with being a sustainable company that aligns with these, the values of the company, as being, you know, being viewed as a sustainable company, to the outside world. So being able to understand neutral or negative relationships to economic within our companies profit, bottom line success is something to consider somewhat the research has explored.

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So the other aspect to the economic dimension, and what I'm sharing here is not, you know, anything new, but what are what are the tools that are being used out there to, to evaluate the previous slide that I just showed you in terms of understanding our profitability and understanding our product strategy and how it aligns with our value system? And, and, you know, profit and growth and those things? These are some of the tools that were used and allowed to literature to explore those areas. So overall portfolio management strategy, how do we approach from a portfolio management perspective, our strategy and our positioning of our products in the market? Our partners, our cost structures, our value,

you know, how do you how do we analyze? And, you know, how do we analyze and reconcile what value means to us? What are our functions as a company and how we go through the economic justification of certain products versus others? Applying Systems Thinking Systems Thinking is to look at the big picture, essentially, holistic view of the organization, and how we go about straight, you know, what is our strategy? You know, our concept to cash is another way of putting it from a Toyota manufacturing or Toyota Production System, way of thinking that we have concepts, we have ideas and new product design, and what does that mean, you know, big picture full circle, in terms of how we maintain our economic model, and, you know, and analyzing it as a system, stakeholder analysis, stakeholder analysis could be within the company and without the company, outside of the company, especially when we're talking about being a sustainable company, to the public, you know, we have stakeholders, we have the, you know, the larger, you know, human population at large, for example, when we're taking a, a step towards reducing our carbon footprint, for example, as a company, you know, the value system that we may hold up the companies that we're making a better place for everyone in society. And so stakeholder analysis going going into the community, and doing surveys and understanding big picture, even outside of our company, you know, what does it mean for our company XYZ to be sustained, you know, be a sustainable company, in this space. All right, having early stage Product Development Strategies aligned with sustainability goals. So that was something we're going to talk a little bit, talk a little bit about later on, in the technical space as well, but how we technically organized our product development initiatives to have embedded within them sustainability goals, right from the get go. Right. And so that is a key aspect that's been explored. And now, a lot of the scholarly literature that's out there have talked about that, that sustainability goals need to be embedded from the beginning. Also to is kind of a take on that product strategy is in alignment with the company's goals and strategy as a whole. So the goals of the company, if it's not aligned, and the value system is not allowed to be being a sustainable representative to the world of you know, the product that they're building, then you know, that might, again, those values don't get, you know, don't get manifested into goals. And of course, in the product, the product strategy does not really take on those goals of having it being a sustainable company as well. So, overall, good product, you know, the company goals and value system need to be aligned with the product strategy, and there's some clear traceability on how that would happen. And that's kind of another way of analyzing the economic dimension of a company. And then risk management feasibility analysis, just from a standpoint of an organization's ability to understand risk of trying to go the route of sustainability, that it may be risky to the point I just made earlier that you know, you don't want you know, trying to be a sustainable, you know, a sustainable company, to society, drive you out of business, right, if that's not your core business model, and those are the products that you're aligned around, you know, you have to understand the feasibility and the risk of actually going the route of building sustainable products and so understanding risk and feasibility It is a key aspect right up front. And then last but not least, an organization's ability to have innovation be a core part of its capability. So an innovative company

15:14

typically will have the constructs and those processes in that culture that's geared in the organization towards coming up with new ideas on how to take advantage and be it be a company that positions itself as a sustainable company, a sustainable product development company. And so that is another key aspect that we're going to look at and are going to be talking about in our research about how

innovation plays a part in that. All right, so I'm going to turn it over to Shaquille to share a little bit about the individual dimension of product development, sustainability.

15:50

Great, thank you, Charles. So what is individual sustainability, it's about the maintenance of the private good, and the well being of individual human capital. And let me define human capital. It is the health education, skills, knowledge, leadership and access to services is all what human capital really means. And individual sustainability includes mental and physical wellbeing, freedom, self respect, human dignity, and fulfillment. And it also talks about the ability to tie, exercise the rights and develop freely. So these are the things that the corporates and the companies should keep in mind, when the products are being developed, to make sure that the people who are developing these products, their well being their rights, and their ability to try is being always be the focus of the company, in addition to having a focus on the profit, increasing the profit margin. So as Charles was saying, you know, going into the literature and seeing how different scholars are looking at the sustainability dimensions, break it and heading in their paper, a generic model for sustainability with process and product specific instances, they asked this question, how can software be created and maintained in a way that enables developers to be satisfied with their job over a long period of time? And it's a very interesting question to ask, why? Because it's been more than 15 years, I've been managing teams delivering different projects and programs. And lo and behold, many times, it is a challenge, because on one side, there are deadlines, and we have to get the work done and deliver quality work as well. Right? There's huge competition out there. And on the other side, we have to take care of this individual dimension of sustainability, right? How can we keep taking care of the physical well being of the teams. So it is, it is very interesting challenge. And as leaders as people who are taking care of the people management side of it, they must ensure that the delivery of the work should not be at the cost of the well being of their teams. Otherwise, they'll burn out. Either they will leave, or they will start, stop producing the productivity that the organizations are really looking forward to. And in another paper, there is there are a couple of very interesting pointers by Henning Burkett and Deborah in their paper call who is the advocate for the individuals and stakeholders for sustainability. So they say, and they express that it using different roles, for example, user, developer, employee representative, and then the other administrative staff within the corporate within the organization. So not only the people who are developing the products there, as well being it's important, but also the users who are going to use your products, those who are being affected by the system that we're developing, for example, for users of online learning courses, they educate themselves to software now, right, there are many, many different online software's available, systems available products available that are being used by millions now, right. So what about their well being their education and respect? The companies must be making sure that their users their end, clients are in their mind when they are designing, developing these products. And as I said, developers, you know, those who actually work on it, they are heavily involved in their systems in designing and developing systems. So there's a set sustainable pace and growth of the for the developers. It should also be considered when for development is happening and the employer representatives, right, those who are the spokespersons for the employees, they need to make sure that they watched the rights of their employees, right. And they are taking care of the mental and physical safety and health of the individuals and it's being maintained. And last but not least, the overall leadership and administrative staff of the companies, they must respect the rights of their users, who are going to be the end users of the system that we are developing and the people who are actually doing the development, design and

development of those, those those products and those systems. So, it is very important that the sustainability of the individuals will also will actually be very impactful, very effective, you know, intention on the results after long term sustainability of the company and as the products back to you, chance.

21:04

Thanks. Well, I think back on to this, I think you have the next topic as well, which is the social dimension of products.

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Sure, sure. Okay. So, let me continue. So, social sustainability, let me first make sure that we all understand what what is social systems sustainability, and based on the different definitions in the academic world. Of course, it is about maintaining the social capital and preserving these societal communities in their solidarity. So, so, let me explain what social capital is I can see investments and services that create the basic framework for society and companies must make sure that the social the preservation of the of the solidarity among the communities of the society are intact, the social dimension covers societal communities, you know groups of people in organizations and income classes, social equity, justice and employment. And the social dimension also covers relationships between individuals and groups. For example, it covers the structures of mutual trust and communication in a social system and the balance between conflicting interests. Henning and briggate. They, they asked, you know, the people that I referred to in my previous explanation of the individual sustainability in the same paper, they asked person for the sustainability from the social perspective is that What effects do software systems have on society, from the communication perspective, interaction perspective, you know, organizations of the people groups of the people. So, this suggests that the companies should define goals for the social sustainability while doing the product development, to make sure that we take care of the sustainability holistically. And their suggestion is best agile practices and knowledge management for educational offers, best practices, mentoring, culture of trust, these things can really enable innovations to take care of the social sustainability. And in another paper by Maria and Rosanna is called the title of the paper is engineering requirements for social sustainability, they suggest that the companies should take care of social sustainability in the requirements phase by following the equality value pattern. And what is this equality value pattern is based on two things fairness to stakeholders, and equality for access to services. So fairness is concerned with a fair selection of stakeholder goals to be implemented in the system for example, goals for stakeholders were weaker and first may have large impact on social sustainability and so must be given thorough and fair consideration. So fairness is important. And when we look at look at the stakeholders, and then equality for access means the services the which are concerned with providing adequate services to all diverse types of stakeholders to enable them equal opportunities to complete a given goal. For example, if a goal is to obtain information from a system, a visually impaired user should be able to use a software system same as a non impaired user. Right. So that's the quality for access. And then,

24:34

in another paper, Nellie and Tricia, they conducted a survey for the research paper title characterizing the contribution of quality requirements to software sustainability, and they concluded that the security requirements in terms of confidentiality, authenticity and accountability are the important content

contributors to the social sustainability of the software products. They said that social Sustainability can be achieved by means of providing an appropriate data and information access. And there are few examples that they gave, when it comes to you know, the case, you know, taking care of the interceding the social sustainability. So, for example, uses the different devices and different operating system must have access to the system by providing compatible version of the system running on desktops, tablets, monitors, and other smart devices, right. And I talked about visual or other kinds of impairment, the system should allow, you know, those who are special needs people like, you know, people who are having issues with visual impairment and those kinds of things, they the system should be developed in such a way that they can also have access and, and can use the systems appropriately. That's another way of ensuring that we are socially sustainable for our products, languages, there should be multiple languages that should be supported by the system, again, to provide the social sustainability. And when this goes on. So these are the few pointers that I wanted to share today, that we should keep in mind when it comes to software. Product Development sustainability, we should keep both individual sustainability of individuals and the social sustainability to make sure that both our end users and the people who are developing these products are properly being, you know, given the due respect, their well being is is being considered, and the positive influence and positive impact should be the goal for the development of the software products. And that will make the development the sustainable development. Okay, back to you.

26:58

Alright, Thanks, Joe. And I'll give you a little overview on what we what I what I did was I explored some aspects and some literature on the technical dimension, product sustainability. So very close, close. Relationship, obviously in a kind of the topics that Shaquille was just just sharing, you know, product lifecycle approach, that, depending on how you look at your lifecycle, will definitely have an impact on how you technically go about developing products, and building products. And so, to secure this point where you just mentioned on social and individual sustainability reminds me not one of the Agile principles of you know, creating a sustainable pace, a sustainable organization, the developers, the stakeholders can kind of work indefinitely, at a sustainable pace, that we're not burning people out that a lifecycle approach and how you, you know, if you got this concept that's called the death march going on in your organization, so traditional, you know, all of us here, we're kind of agile proponents, and, you know, the traditional Death March, where the pressure builds towards the end of your project, then it's like nights and weekends, nights and weekends, and just the cycle happens again, and again, and again, that that is not a sustainable way to build product. That's not you know, technically, it's a lower quality way of building product. And it's not, it's just not sustainable over time. Another theme that that is, you know, pop it up, just, you know, as I'm hearing my colleague, Shaquille talk about the benefits of being a sustainable organization for your internal customers, internal customers are those that are consuming work, building the work helping to, to build the product, we want to create a good respect for people and culture, just as we do with those individuals as well as our external customers. So sustainability applies internally and externally. So you know, the thing that I hear is you got to walk the talk, if we can't walk the talk, we're talking about building products that may have a low carbon footprint or building, you know, wind farms. But if we internally don't adhere to a good precedent of sustainability and maintaining for our own individuals in our companies, that's not walking the talk. So understanding the technical approach to building products in a sustainable way is just as important as building a sustainable product. We got to gotta walk the talk. Organizational maturity has a big impact on how we

would go about doing this, obviously, right. So if we're, we have a good again, kind of starts with culture where we have a good culture, of understanding how to build these aspects into our life, our product lifecycle where we're at As leaders within an organization, we're ensuring that we're adopting mature practices of requirements management of design and an iterative development and, you know, having a sustainable work environment, that that organizational maturity is going to play dividends in terms of creating a sustainable technical approach. And then obviously, being able to walk the talk and be a good example of a sustainable organization that builds sustainable, sustainable products. Another aspect of sustainability in terms of our product development approaches do we have the technical and business domain know how, and it really comes down to, you know, an aspect of talent management are we do we have processes in place to hire the right people, you know, is there their organizational maturity around things such as job architecture and understanding the needs that we have as a technical group to bring in the right subject matter experts that have the right understanding that have the right training, and then also to, from the to feel just said to us, there's a lot of relationship here with knowledge management constructs within the organization to align people on the right thing to do or right align people on the right technical approach a lot of people from a business process and business architecture standpoint, the goals that we're trying to achieve with our products. So again, organizational maturity has a close relationship with that as well. Another key thing that I thought was very interesting in the research, or the literature that we initially did for this was that there are sets of sustainability principles. So we're building products that need to reflect either being a sustainable product, obviously, like we're building, for example, you know, electric vehicle, or autonomous vehicle, or asset, our parts to that.

32:00

And we are also to trying to build it in a sustainable way that there needs to be recorded that needs to be baked into the requirements from the start, we need to be able to have stakeholders and business owners that can articulate the vision and the necessary business outcomes and leading indicators for product design upfront. And so our product needs to reflect that, you know, that that definition, from the very beginning with those requirements in mind those principles around sustainability of what we're wanting to bake into our products to be there from day one. And then last, but not least, development practices, that that reflects sustainability. So what we're talking about here is is that, you know, choosing, you know, choosing an approach, like we just been talking about, you know, and natural approach or a way that that our practices are representative as well, from a principle standpoint that we don't want a lot of rework cycles, or discovery and innovation is lagging with specific practices, we're choosing, you know, one versus another. So we want to have an approach that is clearly representative of the sustainable approach that we are looking forward are looking for. Alright, so that takes us to the end of what we've researched up to this point. Dr. Weil, do you have any things to shed any light on what we've just talked about or anything to add to that

33:34

we kind of brushed over the environment. But environmental sustainability is another aspect and we we think it's important to consider as an organization, you know, your own carbon footprint. So a lot of times organizations use a lot of physical resources, spaces, transport and all that kind of thing. And those types of things. They're, they're a burden on the environment. So we got to be cognizant of the

cost of that and think through strategies to reduce that sort of thing. So I think we're our little sly was missing on that. But that's all I got that. I think y'all did a good job of covering the others.

34:12

All right, great. Any questions from any of the attendees, either in this webinar or from the LinkedIn live group? We're willing to, to? To help answer or give any insight to this research that we're conducting in any, any quick q&a? From the audience that's listening? One question I have either Shaquille or doctor Well, if you could answer this for you guys, is that for an organization that may want to participate in this to be a part of this study? What type of benefits do you think that they could get from some of the insights that might be that might come out of such a study that we're that we're running? What do you guys I think are some of those key benefits an organization might achieve.

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So I think the most, most obvious one is possibly that they become more sustainable organization. And that that, that it benefits them economically, benefits their their retention efforts with employees, and they can improve their standing with the with the public and with the social or social folks at large. It's also, it also gives them an opportunity to by becoming part of our research in particular, to assess where they are, with respect to sustainable practices, there aren't any real metrics out there to measure that. But we're going to start looking at how you can identify how mature you are with respect to sustainability, sort of like we've had with other maturity models. But this gives us an ability to say that this organization is at this has quite a few sustainable practices, this one has nine, they're looking to improve, and that sort of thing.

36:03

All right. Thanks for that. You got any, any other other aspects at that one? One? Just from the perspective that, that I see to that, you know, what does sustainability mean, for your organization? That's one of the, the, the outcomes that I see too, is that, you know, sustainability being more of a, you know, kind of a little bit ambiguous. So we talked about carbon footprint, are we talking about development practices? What do people value in your organization? As what sustainability means? You know, it could be from a, you know, social individual perspective, I don't, I don't like to work weekends, but there's gonna, you know, that might be something that comes out of this too, that is very insightful.

36:53

Me to just share one interesting kind of finding, after going through a bunch of papers on this idea of sustainability, especially in the software domain, I was surprised that actually very little research has been done on that. And that's one and the second is, the more I read about it, I mean, there are many factors that can really influence the business outcomes in the long run. And sustainability is about, you know, what's, what's the, what will be the outcome in the long run. That's, that's what sustainability is all about. So I think companies, especially the high tech companies, because they are into very competitive mode, there is a huge competition, so many technologies every day coming up, popping up left and right. So to to catch up with that. Competitions, I think companies are doing a lot. But I think the concern is, after going through these papers, and these findings, that I got from a couple of really nicely research, surveys and papers and findings, that there is a lot that needs to be shared with the industry about the best practices, especially the individual. And and if you ask me my opinion, I think the social

side is probably the least concern, at least talked about when it comes to software development, sustainability. So I think, as you asked, like, what is in it for me, for the viewers, for the audience, I think they can definitely have a better understanding through through this research. And if they want to, you know, help us or maybe do the survey to the interviews with their companies, we can definitely go through to all those different kinds of data collection, and it will be all anonymous, right? But the benefit would be you will get to know, what are the different metrics for sustainability and how, for example, your company is, is performing on those metrics. So that will that can really make a huge contribution towards a better decision making but for a more, longer sustainability and a better sustainability.

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All right, thanks for

39:23

another. Sorry, sorry to catch up. Another benefit would be that a lot of organizations have corporate social responsibility efforts in playing these days. And, but no way to really measure the impact of those of those efforts. And I think that CSR is important, but it's only one facet of a sustainable practice. So this gives them the opportunity to weave that CSR into your broader set of strategies that they can measure and get some sense of what the impacts are.

39:57

Yeah, yeah. You know, when I when I hear that Like I said, you know, you can measure how your company wants to talk, you know, you're a sustainable company. But how are you operating as a sustainable company or so and so that definitely be something good to have an insight onto. All right. With that said, let's see if there's any other questions coming in the webinar chat than me. If not, we can kind of go to the last slide here, which is how you can actually be a part of the study. To actually be a part of this, this, you can participate in this. So that's why we're offering this as a live session, for the open public here that we would love for you to be a part of this, if you wanted to invite this research into your company, as Shaquille pointed out, is completely anonymous. But you can, as a company get results to see how you you stand up to these metrics and, and how you're actually walking the talk, also to potentially be informed of or be a part of some of the publications that get produced from from this research. So we're definitely looking for those eager that that are looking for, you know, that opportunity as well, of course, us us as researchers, that's what one of our main goals is to get these publications out. So that is going to happen. But if there's something that you might want to be, you know, take study or something like that, that might come out of this, that we could be a part of that might be something that also is an outcome of this. And then lastly to this is we see our contact information here that please reach out to us, any three of us, you could take a snapshot or screenshot of this, and we'd love to talk with you more about it and how to set up you know, a research plan and opportunity for your particular group. And also to this will be recorded this exact this actual webinar is going to be recorded and it's going to be available. So you'll if you're on the in the session, right now, you're gonna get an email of it, please reshare it out and you know, maybe share to anybody who else might be interested. And being a part of this research. We would love to work with you on that. But that's all for me. Any any last words she kill Dr. Will before we end the webinar.

42:28

I'll just say welcome. Join us and be part of this fun journey. Thank you.

42:36

We're looking forward to having kindness continue and being engaged with you.

42:43

All right, so good. With that. Thanks, everyone that joined and again, you'll be getting the recording and enjoy the rest of your day. I would go on