TASKTOP

Episode 16: Dr. Nicole Forsgren & Dr. Denae Ford Robinson
Episode Transcription

Mik:
Hello and welcome to the Mik + One Podcast where I sit down with industry leaders to discuss the Project to Product movement. I'm Mik Kersten, Founder and CEO of Tasktop and best-selling author of Project to Product: How to Survive and Thrive in the Age of Digital Disruption with the Flow Framework®. On today's episode, I'm joined by two very special guests: Dr. Nicole Forsgren, Vice President of Research and Strategy at GitHub, and Dr. Denae Ford Robinson, Senior Researcher in the SAINTes Group at Microsoft Research. It's an absolute pleasure to have them both join me on the podcast. Both Nicole and Denae are brilliant researchers and technologists who are pushing the boundaries of how we think of both the technological and the social aspects of how software is built. Denae holds a PhD in computer science, has interned and collaborated with many research laboratories, contributed to countless publications, and is also a affiliate assistant professor at the University of Washington. Nicole is the author of the Shingo Publication Award winning book, Accelerate: The Science of Lean Software and Devops, and is best known as lead investigator on the largest devops studies today. We had a great conversation. I can't wait for you to hear it. With that, let's get started.

Mik:
Hello, everyone. Welcome to the Project to Product Podcast. I'm thrilled to have Dr. Nicole Forsgren and Dr. Denae Ford Robinson here with me today. Nicole and I were having discussions around developer productivity, which we tend to do fairly regularly. How to better measure it, how to better measure in a way that empowers teams rather than doing these big brother-y things. This is something that's been a topic near and dear to me since my PhD thesis. Nicole actually introduced me to Denae who it turns out we've been living in parallel research universes for all this time. Denae has been doing some incredible work studying open source communities, how inclusion should work at scale if you want to make sure that we get the best of the world's talent, not just a very small segment of that talent. Nicole, why don't you tell us how this part of the journey started? Then, we'll go on into some discussion.

Nicole:
Yes. As you said, we were nerding out as many nerds do, talking about how to measure productivity, how to measure systems, the right kind of measures to use so that we can empower developers so that these measures don't get weaponized against them, how can we deliver insights to teams and organizations? And I had just been having these great conversations with Denae and I was like, "Wait. Hold on. We absolutely need to invite Denae to this conversation" because Denae has been doing this amazing research for developer productivity, but not just productivity, but things like, how can we think about measures and measuring productivity in ways that give us great insights to people, insights to our systems, and insights into the ways that we build systems and measures for ways that help bolster inclusion, diversity so that we can build these better systems?. And so, Denae was down for having more nerd conversations in ways that we measure things better, give us better insights, and think about the ways we build systems, and what it tells us about all of these measures.

Mik:
Excellent. Thank you for joining this time. I'm really glad we're hitting record on the conversation because the last time we didn't and we learned a ton. Denae, maybe you could start just giving us some of the research that you've done, some of the work that actually led to your thesis, your study of these open source communities like Stack Overflow, what got you interested in it, and where that's taken you.

Denae:
Yes. I like to start off by always saying I study the Yahoo Answers for programmers. I mean it by every essence of the word where it can be a toxic environment, it can be very helpful. It seems like it's existed for so long, so I was really interested in how developers ask questions or specifically how they ask for

help and help seeking strategies they use in online communities. We know that some of those help seeking strategies don't go as well in person, such as classrooms. But, what does it look like online where you can be anyone you want to be? You don't have to present it yourself, you have a little bit more control over how your identity is shared, how people receive you. There's some instance of being that vulnerable that still make people not want to engage. So, I was really curious as to what communities that's happening in. How are people overcoming it because there are people who do contribute? How do we use those strategies of the people who are contributing to help the lurkers who are interested at least, the interested lurkers? What mechanisms are they using? How can we use that to build interventions and design interventions that can be on platform like a part of the products?

Denae:
I'm really interested in that whole three step process. A lot of those experiences started by answering the questions of the marginalized. The squeaky wheel gets the oil and we're seeing that there's a low representation of women, and other under represented minorities, and people from different countries beyond the global north. We're thinking about the global south in countries that exist beyond the US, beyond the UK, and beyond those popular regions we see for technical experiences. I like to target the few and help the many. That's the way I like to brand my research. Targeting the experience of the marginalized, figuring out how we can use those experiences or learn from those experiences to build and empower everyone, including these marginalized folks.

Mik:
Excellent. I think this is just such ... I think it's always been a timely topic. I'm glad to see it's actually getting a lot more attention right now. I think what's happened with the shift of work styles, this is something that's on almost everyone's minds where it used to be that whether it was office politics or office cultures would adapt and have their own diversity and inclusion problems. I've actually experienced some first hand, and some of your research where you have these ... My background's all open source, right? And open source projects have their own cultures and they have their own versions of inclusiveness and exclusiveness, and cliques, and these kind of things.

Mik:
The fascinating thing to me as I've noticed a shift to more work from home, that kind of open source culture which we can have open and embracing cultures to contribution, to people asking questions, and not being made to feel stupid because they just don't have all that context that these inner circles had for a while, that style of interaction whether it's my company, the organizations we work with, I'm actually now seeing that as becoming the more normal interaction model for development in large organizations. I think some of those things that you learned and in some of your research on how open, how inclusive projects are, we're seeing that manifest itself more than ever in companies today. Maybe just start with Stack Overflow. What were your key take aways from that work?

Denae:
For the first Stack Overflow work, the first one was identifying barriers to contribution. We started off with understanding the challenges of women in these communities because Stack Overflow has their annual developer survey. Several researchers have done work and empirical studies on understanding who contributes to Stack Overall, how, where they're coming from, but not a lot have done targeted work to figure out, what's happening with this specific community? So, we started off identifying the barriers of women and we interviewed about 21 participants. One of them actually being one of the top ranked users of all time, so that's really awesome.

Denae:

The reason I mention that is because we have the lurkers and active users as well, but we can figure out what deters the lurkers and how that top rank user of all time overcame those challenges. In fact in that interview, that person mentioned that they had those experiences too, they had a fear of negative feedback, they felt weary of the large intimidating community size, but they were able to overcome it by thinking about how they can contribute and give back to the community. More of a community service model. They feel like they got so much from Stack Overflow and they wanted to be able to pour back into it. For whatever reason, that superseded the fears. They're all valid, but they were able to overcome those challenges they had.

Denae:
We started off with those women. And then, we decided 'ok, these barriers exist. Let's see how they exist across the gender spectrum.' And not necessarily like a gender dimorphism. It's not like all men do this and all women have had challenges with this. We saw that all 12 of the barriers existed for folks across the spectrum and that everyone experienced these challenges. There were just about five barriers that significantly hindered women more than men. And in fact using those barriers, we were able to build the Stack Overflow Mentorship Program, which was in collaboration with Stack Overflow, so I worked with Kristina Lustig, [inaudible 00:09:49] who's our developer on the team. Kristina was one of the first researchers at Stack Overflow.

Denae:
So, it was really awesome to see how though that the work that started, understanding again the experiences of the marginalized few, less than seven percent in the community ended up being a feature that we built for the entire community, not just women, not just people from the US, and we in fact saw participants from Egypt engaging and figuring out how they're using identity to signal each other was something inspiring for understanding how we do this in other platforms like GitHub and code review. How who you are and how you present yourself can invite people to connect with you. It can also be a vulnerable thing to share. Looking at that dichotomy is something I'm really interested in and that's where the future of my work is going.

Mik:
Okay. Excellent. Nicole, you and I have been looking at measuring productivity in organizations, large scale devops transformation, and so on. I think we both intuitively get the sense that if you have more diversity, more inclusion, more ideas, more contribution, things are better. We also have all these stories of the opposite whether we've lived them directly or we actually observed them sometimes through data, which is fascinating where if you have one person who's holding the keys to the ivory tower of this part of the architecture and you have to take that person to lunch eight times to get any change made or to get your questions answered, well that's not a great pattern and it's even harder to take people to lunch now. Tell us what's interesting to you about this because I think we've seen these patterns and anti patterns. We obviously are both big believers, and the fact that Denae's work is unlocking these amazing patterns for collaboration, for inclusivity, and for much more productive and healthy organizations. I think you and I probably do fixate on the anti patterns and study those more than we don't, but tell us what's interested you about this work.

Nicole:
I think I really love saying the things that are similar in open source and some of the similar patterns we also see within organizations. It's really interesting to hear how Denae has found some of the barriers to participation in some of these open source, open collaboration, knowledge sharing, and knowledge seeking communities. I guess those are some of the words that I've used in some of my research because I used to do a bunch of knowledge management research. Some of the things that I used to

study were knowledge management, knowledge sharing from developers and [inaudible 00:12:12] admins. We used to also look at knowledge sharing, knowledge seeking behaviors, because when we're working in complex distributed systems, finding ways to make our systems work can be really hard. And so, what happens when we have people who are asking questions, looking for answers, and lurking? But also, value lurking because sometimes contributing can be tricky. Sometimes, we lurk because that's the safe way to interact, that's the safe way to understand.

Nicole:
One of my early investigations found that there are about four archetypes or profiles for how sometimes people interact with ... we called it a knowledge base, but it wasn't really right. It was how you can search similar server profiles, how you can search for tickets, how you can search for knowledge bases, or how you can ask each other questions. These were I'm going to say okay, because historically many people thought that you either asked questions or you didn't. If you didn't, that was a fail. That's not necessarily true. It sounds like Denae's saying the same thing. Once you accept that or make it okay to lurk and learn, then-

Denae:
Lurk and learn, I love that. That's exactly [crosstalk 00:13:25].

Mik:
Lurk and learn, yes.

Nicole:
You can lurk and learn, and it's okay because sometimes we take notes in our own Post Its or pieces of paper, or we talk to each other and it doesn't show up in our systems. There is no artifact for that knowledge transition happening. What can we do to help support, bolster, and create these situations and environments so that it is safer to share because sometimes you have to lurk a little bit. Sometimes, you want to lurk just to see how people communicate. Then, you can move forward, and understand what the norms and behaviors are in the culture.

Denae:
Exactly. That's what the mentorship experience was strictly about. Helping the novices. We had 70 thousand novices. People were just entering the help room, check in, and they're like I'm going to check out actually, not me. Ultimately, there was a whole filtering that happened, but we had over 520 novices enter the room. I think only 347 talked to mentors because think about it, the people who maybe they've had negative experiences or they've seen others have negative experiences on the platform and they're like 'well I'm not sure if this is going to be anything different. So, before I engage, I want to make sure this is a safe space. You all are branding it as this, let's confirm that. Let me see how you respond to others, let me see how people are finding value. Maybe then, I might feel comfortable taking the leap.' So It's about learning those norms. Lurk and learning your norms. I really like this lurk and learn. Like a brown bag lunch, like a lunch and learn, lurk and learn.

Nicole:
We've seen similar things in terms of communication, collaboration, knowledge sharing. Then, what does that mean for ... as we tie it back to ... sorry, I got super exited about what Denae had been saying, back to productivity. If we want to think about productivity in software development, what does that look like? When we think about the signals that we see in our systems, sometimes that'll show up as a push, pull, or a commit. Sometimes, it won't because if I've just talked to someone, that won't show up. If I jumped on a Zoom meeting, that might depending on how we're tracking those measures. Sometimes, if we're doing

peer or mob programming, it might show up on one person's commit, but not another's. We want to be careful about what it is that we're thinking about.

Nicole:
There's also some really foundational work that Lucy Suchman did years ago about making work ... the title is Making Work Visible, but it's about invisible work, it's about the incredible work that so many people on our teams do that doesn't leave footprints, but as soon as they bail, as soon as they leave, go on extended leave, vacation, or something, everyone's productivity, whatever definition of the word we want to use, tanks because they're the ones that do the glue work. They do everyone's rubber ducking, they do everyone's ... it's not just ... not that administration work isn't important, but they do even sometimes super technical rubber ducking for everyone.

Mik:
My experience with this was I started lurking and learning as well on open source projects that I was sitting in on. I did notice that this to me was a pretty interesting realization that I think is coming full circle now where if the only way you have lurking and learning is by reading code and looking at pull requests, it's not enough unless you already have a lot of that context. But I think there's this assumption often, be it in open source projects or in large organizations, that's efficient. You figure it out. If you need some API extensions, just go give us a pull request and go from there. As you said, Nicole, if they actually find the right sorts of things and you've got ... Denae, some of what you're doing, [inaudible 00:17:10] program to engage you, I absolutely have noticed that those projects that have that in open source, they thrive much more. They just draw more contribution, it's just as you said it. By making their work visible, the workflow visible, and then they're conversations and collaborations visible. You all of a sudden open yourself up to a much broader community of potential contributors.

Mik:
I think again in the shift of everyone moving into this, it's just not sufficient to be talking everything over Zoom and so on. What have been your experiences, Denae, with how to help that within both open source projects and really help organizations think about it that way? What kinds of things have you been doing more recently building on the past work to make it easier to incrementally engage and get people contributing, committing, and really increasing the diversity in design of [inaudible 00:17:59]? I actually want to get this to the point of architecture. I think there's this incredible thing that when we don't have it, architecture's just degrade into what you just described, Nicole. One person knows everything, they leave, and you're now rewriting the entire platform whereas in healthy organizations, you have that diversity in the architecture, you have a way of onboarding people onto it, it's very different. Denae, I would love to hear your experiences on this front.

Denae:
Oh, yes. I was just going to actually add to that the transparency's important. Something that I've been working on since trying to transition from Stack Overflow to GitHub is understanding how newcomers engage in Q&A, but also how ... like Nicole was talking about, the knowledge sharing, the information foraging. Where is zero? Where do I start? It's about being transparent about how to contribute, being explicit about how to contribute, where do you draw your guidelines of what you will accept, what type of pull requests you're expecting? What does a great merge pull request look like? Give me an exemplar of what does not make it in.

Denae:
Figuring out where to draw those community guidelines. I think we talk a lot about that in other social media platforms, but I don't think we get as concrete as we need to be as for online programming

communities. Understanding that transparency, making governance explicit, and have different rules for these communities, have them stated and posted where everyone can see them. Allow people to contribute, then allow the rules to evolve over time as people become new contributors to the space. I think a lot of my work has been really figuring out how these different rules shift for each community, how people are sharing them, how they evolve. I know people like Amy [inaudible 00:19:41] are looking at really interesting new governance models of how online communities accept merges and accept adjustments to these rules. I think she had this paper called Policy Kit.

Denae:
It was talking about how people do these types of conversations, democratic situations of when people are sharing knowledge, and evolving rules, like how we do it in the US democracy. Well, why don't we do that for online communities? How do we get people to vote? Why is it only one maintainer who gets to accept [inaudible 00:20:10] pull requesting? There's a dialogue that happens, but ultimately it comes up to one person. How do we get more intentional about that? I think even a lot of the talk I gave on Wednesday, I ended it on this idea of being intentional about identity, but it was also being intentional about rules. Make governance explicit like I said, be welcoming, have guidelines on what this looks like. I think understanding how different open source projects and other communities are doing this, we can learn a lot. Just even beyond open source communities, beyond on our online programming communities. People who got it right, maybe we can figure out how to adapt that for our work.

Nicole:
I love that point. The point about making it explicit and transparent for what it means to be part of a community, and speeding up and accelerating that onboarding process, I think is so important and so interesting. Several years ago, I actually did a study with Debby Fields, the Scratch Community. Kids doing work on Scratch.

Mik:
I love Scratch.

Nicole:
Right? It's so great. It was a very simple analysis using NLP, semantic analysis. It was about how kids communicate differently when they're talking about their Scratch projects versus when they're not talking about their Scratch projects. Even kids, young children, I think they were five to 10, five to 11, their communication patterns are statistically significantly different when they're talking about projects versus when they're talking about other things. So, our software community norms significantly differ depending on what we're talking about - which shouldn't be a surprise to us, we know this - but if that's true, even among children, in software, even a children's open source software platform, how long did that take them to fall into those norms? The faster we can get people to go from lurking and learning, into accepted and feeling like they're accepted members of the community, I think is huge, it will really break down those barriers, Denae, to your work and your point, right?

Denae:
Yes. There was something else I wanted to hit on there and you highlighted the difference between how we talk about these communities. When we're talking about technical work and we're talking about the details, then we have our personal or maybe we're talking about maybe more social aspects of what film may have influenced what variables you're using in your code and different characters like that. I wonder, why do we have to keep them separate? I feel like some people do blend them. Again, this comes in when you think about ... I know for example as researchers, we write papers, and we give personas. I know for me, I like to use personas from film, culturally relevant ones. I watched this show like Scandal, I

want to include Kerry Washington as the characters in my paper. I'm going to get analogies to policy because I like those types of films. That's a part of bringing our personal interest with our technical interests. Where is the overlap? Some people do find value, feel comfortable, and find authenticity in that overlap in bringing those both to the fore. I wonder if there's a different type of different personas of developers of those who like those intersections and like to present them, others who like to keep them separate. Maybe this is a topic conversation about a future study or something [crosstalk 00:23:47]-

Nicole:
I know. We have these conversations and we end up designing studies. I will say these kids absolutely overlapped. When they were talking about projects ... Scratch projects for people who don't know Scratch, it's drag and drop, but you can build these amazing things. But they were still giving them feedback and interesting things about projects, but they were ridiculous projects and it was fun. Then, they would go off and they would talk about slaying and crazy ridiculous things. I think the latest thing was cats or something. You could tell when they were very excited about a project even if the project overlapped on the other and when it didn't. It was slightly different, but the language format slightly changed. I think it was because they had fallen into the norms of group communication. Trust me, there personality was there. I want to find this paper and share.

Denae:
Yes, please.

Nicole:
It was great and it won a Best Paper Award. The community is interested. People still want to study this, it's great. Now, we have to do a study here.

Denae:
Yes, we do. We do. I know GitHub does sometimes these hackathons. Some developers at GitHub just post some fun things on Twitter. There was this example of someone saying ‘I'm pinning my photos, I can pin my photos to my favorite pin repositories now.’ People were like pinning photos of their children. Now, this is an explicit call of intersection between your personal and professional identity. Maybe there's a difference between the developers that wanted to bring all of them to their technical work versus those who don't ,and those who found maybe there's comfort and confidence for both of those groups if that makes sense. I don't know. It's really interesting to me.

Nicole:
Stay tuned, everybody. The study is going to come.

Denae:
Yes, stay tuned because this is really interesting.

Mik:
Denae, you mentioned something which I think is along this theme. Something that really stood out to me was really interesting, had not occurred to me, and a lot of learning for me is just with online personalities, with remote personalities, and so on as you just mentioned is being intentional by identity. I think this is something that's going to be quite new to people, but can you say what you've learned about that? Bringing your personality to it, bringing your culture to it is key there and there's another kind of control and flexibility that you can have with remote work and with distributed work. Can you tell us a bit more about that?

Denae:
Yes. Actually, there was two things there. For the bring your identity and figuring out where you want to have the intersection… In 2016, 2017, there was this 'I look like an engineer' hashtag movement. This identity based hashtag movement where it was started by Isis Anchalee who is a developer in the Bay Area. She never had a Twitter before, she had a very weird scenario with a colleague or someone around, and she was saying they said to her, "You don't look like an engineer." She was like, "What are you talking about?" She made a Twitter, encouraged by one of her mentors that said, "You should just share it." She posted a picture and said, "I look like an engineer." It was important to note that she implicitly implied that there are other intersecting identities.

Denae:
Actually, she explicitly said it later on in a blog post, let's be clear. The fact was that I'm trying to break stereotypes. I don't want other people to feel like this, I don't want other people to feel like they don't belong. What was interesting about this identity based hashtag movement was that the intention was to have others engage. It started off as just a women. Then, she was like, "There were young mothers who were sharing this, Latinas who were sharing, Latinas in computing," so they started seeing these intersecting identities and people intentionally sharing these on their technical platforms. In our interviews and in our analysis of the Twitter data, people were saying that "I was weary at first in figuring out how I should share or talk about these very personal identity factors or facets in these technical spaces", but there was empowerment of people being the only one.

Denae:
This shared only one-ness. I'm not really sure, I always call it that. Being able to see that you can be your whole self, you can bring your whole self to your technical work, you can be the engineer and also be a soccer player. You could be the engineer and also be a nuclear engineer at NASA. We saw those interesting stories, so that was something I did with Laura Dabbish and Fannie Lou at CMU at the time. But it brought this idea of, why can't this happen everywhere else? The fact that this even had to happen to break a stereotype, why isn't there already a norm of you can bring all those authentic experiences, your personal experiences, the rest of your identity to your technical work? The idea of, how do you share that in technical spaces and how your peers receive that is what the challenge really there was. How would others receive me now that I'm also being explicit about my identity?

Denae:
You can see who I am, you can see that I'm a woman, you can see that I'm Latina, but now I'm explicitly saying it, I'm not trying to make a political statement, but I'm saying that I am who I am. I'm also this too. I'm just really curious how that looks like in the technical space. When you mentioned remote work, it makes me think of how people bring different flavors of identity in the current pandemic where ways to do that are people showing their dogs that show up now. They're like, yes. I'm also a dog mom or I'm also a farmer. Here's my tomato farm. People will show different parts of their identity like I'm an artist, you see that I have sculptures and pieces in the back, so now you see an explicit part of my personal life because you're in my home. You're able to view, but you're also obviously here for the technical content, which is why we're even having the technical conversation. We're at work, but you can see my home life explicitly. I think with this pandemic, we're seeing people being a little more authentic.

Denae:
We're seeing some people sharing a little bit more of themselves where they feel comfortable. It's about providing a safe space in order to do that. There's other ways people are doing that by posting fun backgrounds or fun family photos. There's my child, they're in the background here. I'm hoping that this creates even more authentic expressions of people's selves in work settings beyond ... this is post

pandemic I'm hoping for. I think it's happening a lot more now. I'm looking forward to what it looks like in hybrid work settings. How do we empower people to do that more later on?

Mik:
Yes. I remember when it first happened. We've always done a lot of remote work. Around a third of the company was remote, so we were used to it. All of a sudden, two-thirds of the company has not done this and they're worried that their kids are there, that something's wrong with their background, or that their pet just jumped in. I think the value of bringing that authenticity is so key. I even sent a message to the whole company saying your kids should be walking into the picture, just get them to say hi, and that's okay now. Do you think then ... Nicole, I'd love to get your perspective on this as well, with this massive shift to the type of work that you've been studying happening across the industry, we're talking about tens of millions of people in technology who just changed the way that they work. You've had all these insights on making your identity explicit, intentional, tailoring it to yourself and your persona. A, do you think it'll get better in terms of acceptance, understanding, and inclusivity of different identities? B, do you think people will start behaving differently, becoming more intentional around it?

Nicole:
I think in some ways, some of this inclusion of whole identities has been ... I don't want to say a surprise, but maybe a little bit of a surprise for some people because for a long time, I've always heard bring your whole self to work, but for so often that has maybe unintentionally been said by white men because so much of tech is white men. Then, suddenly so many people were bringing more of themselves to work or maybe not. For much of my career, I have not brought my whole self to work because the smallest details from my past have been weaponized against me, which is strange. I'm from a small farm town in Idaho, somehow that was weaponized against me. It was very strange. For many of us, we have not because when you ask people who are under represented, marginalized, or vulnerable populations, and you ask them to essentially be more vulnerable, that doesn't always work.

Nicole:
When tides shift in some ways, you now bring your whole self to work, it can suddenly be surprising, jarring, or something. Now, you're like I am here and I am fabulous in many fabulous ways. It has been maybe jarring for a lot of people who were the majority and were not prepared for this onslaught of fabulousness. It's like you've been talking about your entire life and now the rest of us are going to be talking about our entire lives because we have this wealth of great things that we can talk about. Now that everyone is working from home, it's like I did not have this invisible family, invisible children, or invisible pets, we all have all of these things. If you want to talk about it, you can. If you don't want to, you don't have to. Like you said, sometimes there are pets that jump in, sometimes there are children that jump in. We can all say hello. If you don't have pets and if you don't have children, you don't have to talk about it if you don't want to, but if you are in lockdown for five months now, six months now, that isolation can also be very real and very difficult. So, that may also be part of your whole self, which is challenging.

Denae:
Having a conversation about that.

Nicole:
Yes.

Mik:
That's so interesting. In an office environment, it's very easy to bring yourself if you're bringing yourself with more talk of baseball or bro culture, and that's the office culture.

Denae:
Exactly.

Nicole:
I don't want to talk about golf, golf is dumb. I've tried playing, it's so boring. I'm sorry for anyone who loves golf. I really love you.

Denae:
I want to talk about Beyonce, I want to talk about Lemonade album.

Nicole:
That Dissect series on Lemonade is incredible if you haven't listened to it.

Mik:
You're bringing your whole self to this podcast.

Denae:
Cue to the listeners, Beyonce. Everything is great, period. That's me bringing my whole self saying "period." Nicole hit on a very important point in the beginning of that, which was the weariness of what the space already looks like, which for so long has been like ‘yeah you can do this’. The space was a space and it wasn't really safe. When you brand a space as being safe and it's not really, that can be really scary for people trying to be vulnerable. I know that participants have explicitly mentioned that in conversations before in our interviews. I think it's important to think about that as well as we move to hybrid work and what it looks like for the future as well. It's about creating opportunities for everyone to be able to feel that comfortable and being receptive to that, to all the differences, to the differences that make us unique, but also the shared experiences within that. Maybe it's not Beyonce, maybe they're not all Beyonce fans, but they do drink lemonade. Boom, now we can have a conversation about lemonade. Wow, there's a shared experience. You know that's a very playful example, but I think we can really hopefully see just a shift in our workplace settings.

Mik:
I really do hope this happens. People have been forced to bring themselves more because of just the environment and that could actually change the culture of being less homogeneous because people are being ... especially if people take some of what you're saying which is become more intentional around it ... Denae, do you think this is now an opportunity for people to become more intentional about their identity in how they engage with organizations and their teams?

Denae:
Oh, yes, because people are already doing this online. I think this is actually ... a lot of the findings that I've had from previous studies, they can actually apply more so here because thinking about online, we have our avatar images that aren't necessarily an image of our human face, they can be cartoon characters, they can be cartoon images, or a picture of my cat.

Nicole:
Be nice to us and our filters.

Denae:

Right. That's what we had online. We have our avatar images. When we go into the workplace, it's not the norm for us to walk around with avatar images over our human faces. Now that we're working remotely if we don't feel comfortable sharing our video or sharing our image, we don't have to. We can turn off our cameras. We now have all the same control ... or similar versions, comparable versions of control that we had in open source communities. We can just turn off our camera. If we don't want to chat, we don't have to talk to our coworker down the hall. We'll just log out, we'll close the computer. We have control over how we share our identity and how we engage with our colleagues a little bit more now. I hope that answered your question. That's where I see things going. I think they're comparable, I think it just provides a setting for more research, more studies to be conducted like more interventions to be tested out now because again some people call this a great work from home experiment and there may be opportunities to see some of those pie in the sky interventions we hope to try out in open source, figuring out what they would look like for the population that are not developers or the population of developers that are not on open source.

Nicole:
I think it also gives us some really interesting opportunities to think about to your point about controlling our image or controlling access. It also gives us I think some really interesting opportunities to control some of our time. In some ways, I love going to the office. There are some things I can only do with other people and a whiteboard. For some reason, whiteboard is my magic. Sometimes as much as I love people, sometimes people ...

Denae:
I need a break.

Nicole:
I need a minute, I need to close a door and think, I need to get some deep work, I need to think. I love people, but I also just need you all to leave me alone. I cannot get things done. Working from home, I can close my windows, I can close my browsers, I can turn off all my notifications, and I can actually concentrate for hours.

Denae:
Yes, you get your deep work done.

Nicole:
Yes, this is not possible at an office because everybody ... again, I love you all. I feel so bad, I sound like I'm such a meany. It's like everyone wants to stop by, say hi, and get coffee. No, leave a girl alone.

Denae:
Got things to do.

Nicole:
Yes. I can get hours of work done, I can disappear for a few hours and it's magical. When we think about productivity, getting into a flow, getting away from interruptions, that's huge. To your point about the great work from home experiment, what could we all do if we all had uninterrupted time?

Mik:
Let's talk about that, let's talk about the getting in and staying in the flow. I think again for me, I know it's certainly early in my career, but I'm continuing to learn about this. I've learned a lot from both of your work. I think often technologists or some technology leaders and managers assume that work really is

just about the technology stack, getting onboarded, getting the environment set up. I think what we're seeing right now in this great experiment is just how important ... to get people productive, happy, and growing, how important the social fabric is. I think the really neat part to me about the intersection of both of your work is something I was really interested in [inaudible 00:39:30] as well, this socio technical congruence. If you have in effect ... let's say you start out with some kind of technological software, architecture, code base, and so on, people have built and evolved it over time. And then if you exhibit some of the success patterns that you've seen, Denae, that architecture actually evolves to allow people to stay in their flow, to make great contributions, to do great work, but that only really happens if you have enough diversity in new people being onboarded into it. And to not only have that learning and the lurking that's happening, it's actually changing the structure of the software.

Mik:
This realization I did of a bunch of open source projects where you could actually see the number of contributions happening overlaid on top of the software architecture. When there were more contributions, pull requests, questions being asked, and not code, I would never study the code being updated. To me, the interesting thing was the conversation, not the code. The more conversation that there was around this code and the broader it was, the more the APIs and the architecture would evolve. What I realized is that you can actually measure that by looking at how much flow there is in terms of evolution of the architecture of delivery. There's this amazing thing that happens when you can align, your org chart is evolved to actually support some kind of inclusion, growth, getting new people to contribute, new ideas to contribute, and people who see the market, the code design, customers differently, then when your software can evolve into that.

Mik:
Nicole, can you tell us a bit about what you've learned because I think a lot of the symptoms that we see like the Brent scenario from the Phoenix Oroject that you outlined before, organizations will have these things, but they're blocking that? They're blocking evolution because let's say they're blocking flow with some of your earlier work around continuous delivery. If you can't have a flow to the market and feedback group, your architecture's not going to evolve because, what's the point of evolving anything if it takes 6 months to deliver something? Can you tell us a little about your experiences and what you've learned in terms of what it takes to evolve technological architecture to support people's best work and people's best deep work?

Nicole:
I mean, there are so many things.

Mik:
Easy question, [inaudible 00:41:37].

Nicole:
I know. Start anywhere. Really, what is comes down to is optimizing for the right outcomes. If we want to make sure that we find ways to develop and deliver software so that we can deliver value, as long as we're starting there, then we can work backwards. By working backwards, I mean think of the things that are going to contribute to that. When we say developing, delivering software to deliver value, that usually means focusing on speed and stability because if we can shift software quickly, stably, and reliably, that gives us good outcomes. For six years, we found that speed and stability moves together.

Nicole:

That gives us better outcomes, it means that we are releasing code that doesn't have a large [inaudible 00:42:24] radius, it has lower likelihood, lower probability of causing an error. When it does, it's going to be easier to debug and find the error. As we work backward from that, that's where we have a big it depends. Depending on what your organization looks like, depending on what your architecture looks like, depending on what your processes look like will tell you where you should start or what you should focus on next. That's just going to be a constraints based method for debugging or identifying what comes next. It's going to be probably complex and a big hairy ball of mud.

Nicole:
Very often, we see it's going to be something like a change approval process because change approval's particularly in our organizations are bureaucratic, slow, and hand waive-y. Anything that introduces delay is going to introduce instability because it causes batching up of work. Anything that is tightly coupled is going to be causing lots of communication handoffs whether it's tightly couple architecture or tightly coupled teams. If you have to coordinate something with like 12 teams, it's going to be really hard to get anything done. It probably also means you have to be communicating and coordinating things with lots and lots of technology whether it's a monolith or main frame or both.

Nicole:
Really, hairy and messy automated tests or build systems are many times the same thing. Many of those things… Mik, you're probably keying in on a lot of this, is also going to probably cause you to not have visibility into any of that and it's going to be causing you interruptions in flow as well because if any of those things had visibility into the flow, someone would be able to look at that and say fix that right there. Anywhere in that flow process where it's easily visible, very transparent, you can see what's happening, you can see the delays, you can see the handoffs, you can see the interruptions and the problems, you can fix it. Those are usually the biggest things we tend to see.

Nicole:
In terms of if we tie a bunch of this discussion up in a bow when we think about productivity either at the individual, team, or organizational level, when we think about measuring things and optimizing for outcomes, tying things end to end and optimizing for teams and diversity, we tend to see much better outcomes if we have a lot of different inputs through the system as opposed to people who just ... it's always been done here.

Mik:
Yes. You just gave me a study idea, which [crosstalk 00:45:17]. Anecdotally, I can attest to this for better or for worse, but more diverse teams actually produce more decoupled architectures, more cohesive, and less coupled architectures, which produce faster flow and better outcomes. I have absolutely seen this within Tasktop on our own teams that when we had teams that were not diverse enough, you would end up with one type of overly rigid architecture that was created whether it's by the smaller inner circle, by group [inaudible 00:45:48], or for whatever reason. I just wonder if we now could actually have enough data to start doing this on this measurement that you end up with better software architecture with more diverse teams with better inclusivity to bring more ideas and things.

Nicole:
Yes, I'm trying to think of the teams in the organizations that I've worked with and that I've seen. Anecdotally, that's matching up at least from the teams that I know.

Mik:

Yes. Then, a bunch of the work that you did, Nicole, was to show that architecture is a bottleneck to flow just like lack of automation is a bottleneck to feedback, which is a bottleneck flow, which is a bottleneck everyone being able to contribute to meaningful outcomes.

Nicole:
You're mentioning flow, it's a bottleneck to flow. The thing that I love about this is that it's almost counterintuitive, but it's not. It's interesting because when you think about it even in terms of culture or psychological safety, the first reflex is so often people will be like "let me build a team that all looks exactly the same because then we're going to talk the same, it'll just be faster." It's almost like the step point five shortcut because if you all talk exactly the same, have the exact same background, have the exact same education, have the exact same training, if you've got the identical A, B, C, D, E, F, G, then things will just go faster. You're like, sure. You won't have friction, it'll look similar. Your first step one to two will be the same. You'll get the incredible immediate short term benefit.

Mik:
Exactly, that's how people [inaudible 00:47:16].

Nicole:
Right, but as soon as you get to step two or two and a half, you're going to start having troubles because you can't think of what comes next. As soon as you start having troubles or shortcuts where you need to brainstorm or you need to do something, you don't have that injection of what looks different.

Denae:
You all sound the same and you all are thinking the same. Same approach, same examples, same scenarios.

Nicole:
Yes. You think the same, you sound the same, you talk the same, you wear the same shirts, you do the same hobbies. All of the inclusive diverse research shows that even things like brainstorming studies, you insert one or two people that look, sound, or have different backgrounds, I think they have double output. It's like if you pay that tax upfront, you'll pay a tax for you figure out how to like Beyonce, when you do that storming forming ... I know that's not the preferred model.

Denae:
That sounds like an official name, storming forming.

Nicole:
Forming, storming, norming, performing, I think there's a five factor model that people like a little more. If you pay that upfront slight tax, then longterm your growth is way better.

Denae:
Yes, and I think it's also important to note here that when you're talking about diverse teams, we're not just talking about gender, ethnicity, culture, we're talking about backgrounds. Even thinking about people from different large, big R1, big popular universities, and people from liberal arts colleges who are thinking about the intersection of so many different types of fields, and how the software you're building can impact. I'm so glad you brought that up, Nicole, because it's also cognitive diversity. How people think, how people share the knowledge, the analogies that they use to represent concepts, and those all contribute to how we build software.

Nicole:
How they ask questions, how they think about problems, the questions they ask and how they phrase it. Even this discussion, we're each asking different things and we go off on these crazy tangents, which sorry. These bananas tangents because that's what helps us think about something in a totally different direction.

Mik:
Yes. It's amazing to me because I think I understand this and then something happens, I realize how little I understand. One of the recent things is, Nicole Byrna, our Chief Product Officer, she brought in interns from the Ann Richards School in Austin, which is a school that helps young women get into colleges from a lower socioeconomic status. They were participating in our meetings, asking questions, and it just completely ... you think it'll make you think a little bit differently, but just bringing that framing to not just me but a whole bunch of other leaders was just amazing. So, hopefully, this is now an opportunity to do more of that. I think, Denae, you're pointing out that. I just really hope that [inaudible 00:50:04] this is the time that I think we can [inaudible 00:50:07] this. Put the systems in place, make learning and lurking as prominent as having commit access to code, and just build in these things that you've learned. I think, Nicole, you put this really well. The things that you've been learning in studying open source, now all of a sudden matter to every technology company on the planet. They should have mattered before, but they really matter now.

Nicole:
In case you missed the memo.

Mik:
Just to wrap up, Denae, any recommendations for how leaders, others should be thinking about this, how they should be getting started, what they should be doing in terms of both small next steps but also the bigger vision that you have?

Denae:
Yes. I think we said it earlier, but I guess one point I would add is that there are opportunities for this overt diversity, equity, and inclusion work. Then, this covert diversity, equity, inclusion work where we can be very intentional and say we're going to build equitable systems to support this community. That could look like affinity groups and empowering the small group of Latinas in computing. That's an example of explicit. Then, it can also be we're going to create a space where we're going to give time for people to share their perspectives from these different regions and we're going to be responsive to turning on closed captioning so we can be accessible to our developers who are new to the English language or who are deaf. We want to be able to think of inclusion in different ways and how it can empower others. A good example of this is curb cuts, [inaudible 00:51:38] for people with low vision. They help people with strollers, people pushing carts, skateboarders. I think when we're thinking about building systems and really creating safe, diversity, equitable, and inclusive spaces, we should think of it like that. We can target the few, but most likely we'll be helping a lot more, so the many.

Mik:
Yes. I think that is just amazing. Like you said, targeting the 70%how many people you end up impacting at Stack Overflow, I think that is an amazing statistic and picture I really want people to take away from this. Like you said, Nicole, you may be paying a bit more up front on the storming, but then when you get to performing, you've got a much more better robust and resilient result. Nicole, any last thoughts as we wrap up?

Nicole:
I think I want to build on some of that. I really like Denae's framing about thinking about the few and how it applies to the many. When we think about things like productivity, don't necessarily be so myopic in trying to optimize, or be 10X or 100X on productivity. Really, take a broad, wide picture. Thinking about ... engagement is such a weird word, but what are the different ways that people can interact with the work that they're doing? Think about what that means and value it for what it is. We talked about lurking and learning. That doesn't mean that it's not valuable, it doesn't mean they aren't using your platform and you have to force them to engage. Value it for what it is, think about it for what it is. Then, also find ways to possibly lower that barrier or just say this is dope. The fact that they are here watching is amazing. What are other ways that we can get people to lurk because this could be incredibly valuable? Then, think about the several other ways that people could be watching, observing, learning. You don't only have to be actively contributing, asking, or anything else. Find several different ways that people can be contributing, value that, and find ways to amplify and shine spotlights on many different ways that people [crosstalk 00:53:48].

Mik:
Thank you both so much. For everyone, check out the resources that follow Nicole and Denae, their research, and their work. I'll certainly keep doing the same. Thank you so much for sharing all of that wisdom with us.

Nicole:
Thanks, Mik.

Denae:
Thank you so much.

Mik:
A huge thank you to both Nicole and Denae for joining me on this episode. For more, follow me and my journey on LinkedIn, Twitter, or using the hashtag Mik plus one or Project to Product. You can reach out to Denae on Twitter at DenaeFordRobin and Nicole at NicoleFE. I have a new episode every two weeks, so hit subscribe to join us again and please make sure to follow the researches. There's some amazing work that they're doing as well. You can also search for Project to Product, get the book. Remember, that all of the proceeds go to supporting women and minorities in technology. Thanks, stay safe, and until next time.