



## 09-07-2024 MATTHEW MULLARKEY – TRANSCRIPT

### 2 SPEAKERS

Fabian Tingelhoff  
Matthew Mullarkey

Duration

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### START OF TRANSCRIPT

#### **[00:00:02] Fabian Tingelhoff**

Hello everybody, and welcome back to our interview series on the DSR Academy. My name is Fabian Tingelhoff. I'm a research associate at the University of Saint Gallen, and today I have the pleasure of interviewing Matthew Mullarkey. Matthew, you are a professor of instruction in the School of Information Systems and Management, and you're also the director and co-founder of the Doctor of Business Administration program at the Muma College of Business at the University of South Florida. Matthew's research is mostly centered on the guided emergent design of innovative technology systems, processes, products, and services across various disciplines and industries. And I don't want to spoil too much, so I'm happy to hand it over to you. Do you want to introduce yourself a little bit more in depth?

#### **[00:00:50] Matthew Mullarkey**

Yes, I can do that, and I'm very happy to do that. I am a late-to-life academic. I spent the 80s in the US Army as an airborne Ranger infantry guy. In the 90s, I spent all of my time in automotive, primarily with Michelin Tire, as an industrial engineer manager and sort of an international liaison around multi-brand strategy and multi-brand management. Then, in the 2000s, I spent two different stints in med device with medical device companies. I also spun off and did my own work on some material sciences and engineering in different spaces, including spaces around armoring vehicles, armored systems, and things like that. In 2010, when I could, I moved back home to Florida and was introduced to the University of South Florida, at which point I completed my PhD under the direction of Doctor Alan Hevner, whom we all know very well. That kind of kicked off my DSR and my design science research activities, which I've been at now for ten years.

#### **[00:02:08] Fabian Tingelhoff**

Wow, that's so fascinating. Especially coming from the military and from actual industry work, as you said, automotive, healthcare, and then starting with design science research. So what brought you to work with Alan Hevner together? So was it DSR, which was intriguing, or what brought you to the University of South Florida?

#### **[00:02:30] Matthew Mullarkey**

I think my industry background means that I like solving problems. I like to make a difference. I'm looking for a better future. And so I was naturally drawn to DSR, where, you know, we have a philosophy of pragmatism. We're more interested in utility than truth per se. We're very much concerned about the complexities of practice. But we're also very, very interested and motivated to develop and contribute to knowledge through design, through design activities. And so, for me, I think it was a natural. Al and I got together very, very early in my PhD process, and we were very interested, mutually interested in attacking sticky, wicked problems that sort of required an intervention. You couldn't sit in your office and solve these problems. You had to go talk to people. And I enjoy doing that. I enjoy engaging with industry. And I sort of realized that having a research paradigm or a research process that allowed me to engage and intervene with practitioners to really look at relevant problems, but maybe from a different lens where we could have

research ingrained and, you know, we could look at the broad scope of what was already in existence and then find a particularly unique application that might solve or at least advance toward the solution of interesting problems.

**[00:04:12] Fabian Tingelhoff**

Yeah, and I mean, with that, you were still one of the first people to actually use DSR and basically propel its importance within the research domain. And therefore, I'm also very happy to talk with you today. Because of that, you wrote some very impactful papers, especially one that you published together with Al Hevner in the European Journal of Information Systems. And this is also the topic I want to dive a little bit deeper into today. The paper is called an elaborated action design research process model. I think it's a very interesting piece because, basically, you propose an elaborated process model for applying the action design research approach. And I'm very interested in what made you write that paper. Why do you think there was a need for this process model in ADR?

**[00:05:11] Matthew Mullarkey**

So the genesis of that paper came right from our own practical experience. Al put together a paper in 2007, I think, on the three cycles of design science research. And in that paper, the beauty of that paper is that he talked about the relevant cycle, which really comes from practice, the rigor cycle, which comes from academia, and then the intersection of those where we build and evaluate novel, innovative artifacts. Right. So starting with that, I love it because you get to build things. That's my premise, anyway. And you get to build them in a way that's meaningful to practice as well as to academia. And hopefully you spin off knowledge that helps practice. And you also spin off knowledge, which helps academia. So we started with that article. We were familiar with the design science research process model that was also in existence. It kind of talked about moving from a problem to a design activity to implementation, etc. But the most impactful paper, if you will, on my research approach, including my dissertation, was the Action Design Research Process model that was proposed by Sein et al. in 2011, I think. They really hit home for me because they combined this sort of well-grounded social science research method called action research, which is all about an intervention. And I give a lot of credit to other disciplines for really developing action research. But the article on action design research did a wonderful job of blending the two. It said, Hey, here's a very pragmatic approach to building and evaluating artifacts or building and evaluating instantiated solutions. However, when Al and I went through my dissertation and, subsequent to that, 2 or 3 other projects that we were working on with ADR, we realized that ADR sort of oversimplified this cycle. It kind of suggested that there was one time you look at the problem and one design activity around a fully instantiated system, but that wasn't the way it worked for us. And we said, Well, what was happening? We realized that we were going through action research cycles in the problem domain before we ever got into the design domain. You know, just understanding the problem is sometimes ridiculously hard, and it takes a lot of iterative activities. Then you figure out the problem, and now you move into design, and you might find out that you're designing for the wrong thing, and you might move back to the problem and maybe move back into design. And design was also iterative. And so we realized we're going through these action cycles—multiple action cycles, if you will—or action design cycles, as we call them. In problem definition, in design, and even as you go into implementation. So as you start implementing, you realize, boy, we have to go back and redesign certain activities. And so the genesis of that article was to say, Hey, let's help those that come after us really understand that action design research, in its elaborated approach, gives you the ability to really understand that it's okay to iterate in each of these stages. To move between stages and to go back and forth. And that was sort of the genesis of the article.

**[00:09:24] Fabian Tingelhoff**

That's really fascinating. And it also sounds like there's a lot of mental energy that went into designing this elaborate process. Especially in the paper, you see that there is a lot of thought process that must have gone into that. So my immediate next question would be: What was the greatest challenge in developing this framework? Because, I mean, it must have been a lot of back and forth in order to actually put all that knowledge together into that one figure in the end.

**[00:09:59] Matthew Mullarkey**

Yes. So we have the one figure four that really takes you through the iterations in a stage and the, if you will, iteration between stages. It came to us in a couple of different ways. First and foremost, we looked at the way we were actually conducting research. So that was the start. And there was a little bit of an aha moment there where we said, Well, wait a second. We're actually spinning off different kinds of artifacts every time we do this. So, for example, you know, we sort of made the argument that in the initial problem definition, one of the things we always do is a literature review, right? Well, that has what's the problem we're trying to investigate with the literature and review. That's kind of a planning activity and action research. What is the literature review? That's actually a new novel artifact, assuming nobody else has done that lit review before. It's a level of abstraction that's fairly far removed from whatever our final solution will be, I admit. But then we have to evaluate that. So we have to really understand. Did the literature review make a contribution to our knowledge of this problem space? And on the basis of that, we either have to go back and redo the lit review or add to it or complement it, or we accept it, and then we do the next level of problem definition, which might be, in many cases, interviews with our practitioners. And so the next artifact might be a series of interviews, and we have to make sense of those interviews, and then we have to evaluate the interviews for their contribution to our understanding of the problem. You get what I'm saying. So that was our first sort of aha moment. It was very much about wow, okay, we're really doing action research in a design manner. Action research in the heart of it talks about intervention. Action design research in the heart of it talks about the artifact. The novel artifact. I loved what Sein et al. put together when they said the seven principles of action design research. And they really did a nice job. They're in the paper as well. And I encourage everybody to read them. Things like concurrent evaluation—they talk about the guided emergence of this design activity. And so, I love that. And what Al and I had as a second aha was, wow, we really need to explain that there is an eighth principle here that's happening in each of these iterative cycles. It's the abstraction of the artifact. We wanted to give researchers a lot of latitude to build and evaluate very unique and different artifacts as they make progress in these iterations, but also as they make progress in stages. In fact, the paper that needs to be written now is about some examples of the design abstracted design artifacts in the problem domain, in the design domain, and even in the implementation domain. Because the argument is that you're growing toward much more complicated artifacts as you move through this research activity. That was our second aha moment—principle number eight. The third aha moment was that we were all assuming that most research projects would start with a problem definition. But in fact, we saw literature; we saw other researchers who were doing DSR, and they might start with an implemented system, and they're trying now to solve or resolve issues with that fully implemented system. We wanted to suggest a lot, like several of the other papers, like Peffers et al., you know, who talked about how there could be multiple different points of entry into a research project. And that's where we really had our aha moment about the stages. Okay, in general, if you're going to build a fully instantiated system, you're going to start with a problem definition. You're going to move into a design activity, and then you're ultimately going to build the system. We said, That's cool. That's alright. We'd like researchers just to tell us, Okay, here's the point that we're entering in the life cycle of this particular activity. It also gives researchers a way

to sort of chunk out papers. As you know, it's very hard to write a DSR paper about the entire life cycle of a fully instantiated novel system. I don't know how many pages it would be, but it won't fit in most of our journals. And so we really wanted to also provide a reader with an opportunity to parse their research while still being grounded in rigorous action. We call it an elaborated action design research process model.

**[00:15:38] Fabian Tingelhoff**

Yeah, and I think this is so interesting because, in my DSR course at university, I learned that DSR is a journey and that just doing one step in the DSR journey can provide a contribution and something that is valuable and needs to be shared. Therefore, I totally agree with you. And I mean, you just talked about your three aha moments in the paper, which I think very much summarizes a lot of the contributions you have in that paper too, and a lot of the novel thinking you deploy. Maybe just out of curiosity, what would be your contribution that you're most proud of? What is the one thing you would say, like, This is so novel or this is so cool what other people made with it?

**[00:16:26] Matthew Mullarkey**

That's, yeah, that's a great question. I've reflected on that, and Alan Hevner and I have talked about it. I think the thing that makes us the most proud of the ADR process model, and that paper in particular, is how it's being used all over the world in our discipline, but also in many, many other disciplines. So I just completed the foreword for a book on the application of eADR to the accounting discipline, where they're now using it. In this particular case, it was a book that has been published in academia in South Africa. But they have dozens of examples of using eADR to solve sticky, wicked problems in the accounting discipline, mostly in conjunction with or in collaboration with industry practitioners. So that was thrilling for me. Just to write that foreword and to recognize that in the last, you know, sort of 6 or 7 years, this entirely different discipline has found value in our design science research methodology. They see value in design as not just a research activity but as a practice for the exploration of new and novel artifacts, and they like the method and the rigor associated with the ADR. So I think that's the latest thing that really warmed my heart and made us both feel like, Wow, you know, if people are using what you've provided, then you have some level of affirmation that it was worthy. Right. And so that has been probably our biggest in my own activities. I'm running this Doctor of Business Administration degree program. It's a program that invites seasoned professionals to come back on a part-time basis over three years, learn research methods, and then complete a thesis, a dissertation, a full-fledged dissertation for publication. And one of the courses I teach is Design Science Research, Action Design Research, any eADR. And I would say 20 to 30% of our students find it extraordinarily appealing. So I have been able to co-publish with a dozen of my DBAs in this discipline, but in very varied applications: hospital systems, doctor's offices, recruiting of IT techs, data science programs, and many, many other areas. So, you know, I think the combination of seeing it spread outside of our IT IS discipline, seeing my own students engage with it and use it and really affirm that it works for them and for their research, and then finding out that it's really flexible, it's adaptable. It doesn't matter the industry or the discipline; it just matters. Do you have a sticky, wicked problem that you really want to solve? And you're looking for utility, and you're happy to take a pragmatic approach, but you just want a rigorous method to do it and to communicate it. You know, I think that's the final piece of this. I think we give researchers and practitioners a vocabulary to use to communicate. Here are the cycles that I went through: Here are the iterations. Here are the artifacts we built and evaluated. Here are the principles—the design principles that came from that. The new knowledge. Design knowledge. Here's how each iteration fed into and informed the next iteration: And that has been the single biggest joy, I guess, if you will, of having that article not only published but utilized.

**[00:20:59] Fabian Tingelhoff**

That's a really nice sentiment. Also seeing the sparkle in your eyes talking about this. Seeing the passion you have is really, really cool to see. And I mean, you already talked about how many of your own students used and applied this eADR process model together with you. Your eADR paper isn't, especially compared to other DSR fundamentals, is not that old. But looking back at writing the paper and now having the experience of having utilized it a couple of dozen times, is there any experience you have gained that would lead you to write it differently or to change something in the paper?

**[00:21:47] Matthew Mullarkey**

That's a great question. At the time, of course, we were able to look at, I think we looked at every single article, published article, even if it was a conference article that claimed to use ADR. And I think there were about 47 papers at that time. So 2019, and of course, we were writing this paper in 2017/18, you know. Actually, as early as 2015, we had ideas about this paper, and it was finally published in 2019. So today, if you want to write the same paper, there's probably a factor of ten or maybe 20 times more papers that we could look at. But even then we saw examples, and we shared those examples of each of these kinds of critical aspects that we thought eADR made as a contribution to the literature. I think today, as I mentioned earlier, there is an article to be written about the nature of artifacts in various iterations and stages of eADR. That's an article that we'd like to write. Maybe we should write together with a small group of people who are practitioners. I think there is an article to be written about adapting eADR, or really, it doesn't need a lot of adaption, but utilization of the eADR in multiple disciplines. IS certainly, but management, accounting, finance, sales, marketing—there are applications across the board. The thing that really is interesting to me today is the application of the eADR and, frankly, the application of design as sort of a verb to the development of new and novel products and services. Mostly as a function of entrepreneurship, working with companies to really come to believe, change their mindset about their own ability to truly develop new novel blue ocean products and services. And fundamentally, even though they don't know they're using a research method, you know, we're applying the elaborated action design science research method to help them iterate through their experimental processes and really co-create and co-deliver, co-evaluate with customers, both an understanding of the discovery of the problem customers are facing and the co-creation, co-development, and co-evaluation with customers of a novel product or service. And so that has really taken hold of the work that I do today, both on the research side but also on the practitioner side.

**[00:25:08] Fabian Tingelhoff**

And I think there are many young and emerging researchers who want to use ADR, eADR especially, as you just introduced it and as you just described it. But as you also already said before those students, those researchers then also have to communicate it effectively when writing their papers. And I mean, Matthew, you not only developed the method or co-developed the method, but you also taught it. You also applied it numerous times. So for maybe the younger, more emergent researchers who want to use eADR in their research and want to publish with it, do you have any tips for them?

**[00:25:53] Matthew Mullarkey**

That's a great question. The first reminder I have is that at the core of what we do is this design activity called build and evaluate an artifact. Right. So be very precise in defining what artifact you are building to solve which problem. Even if it's not the fully instantiated system, it's an artifact that's on the journey to that fully instantiated system. Define the artifact. Be very clear about that. I think sometimes we see papers where they forget they've done so many other good things and they just forget. Hey, you never defined what the artifact was at that point? I believe in the principles, including our eighth principle of abstraction.

And so I would encourage new researchers to go back and reread those principles of ADR and the principle that we wrote about in terms of the eighth, the abstraction of artifacts, that I think is important. The third, and Jan vom Brocke and I talk about it all the time, is that none of this matters if we don't create design knowledge, right? So let's figure out, and this is where it pays to be kind of clever and thoughtful, insightful, as a researcher. I suspect we're overlooking interesting design knowledge at times and not actually reporting on it in the articles that we write. And I think as new researchers, sometimes we have our heads down in the process so much that we forget, Hey, what is creative, clever, new knowledge that we could share? Maybe we've come up with a brand new technique for a lit review that could be design knowledge that's worthy of sharing, even though you know it may or may not be design knowledge that is going to be valuable for the fully instantiated system or process, product or service. I don't know if that helps, but those are probably my top three thoughts.

**[00:28:08] Fabian Tingelhoff**

Thank you so much. And I think we're also already coming to an end. And I have one last question for you, Matthew, because you have also been part of the development of DSR as a discipline. And my very last question to you would be, How would you like to see DSR developing in the future? What are your wishes for the field?

**[00:28:37] Matthew Mullarkey**

I think DSR has the opportunity to make contributions across multiple disciplines. So I would like us to continue to explore how to share our design knowledge, if you will, and our process knowledge on DSR with the other social science disciplines in the business realm writ large, number one. Number two, my experience in places like South Africa working with teams there, working with my own DBA students here in the US, and now we have an international audience with our fully online version of our DBA program. I believe that we have more to say to practitioners than ever before. And I think practitioners have a hunger for what we can help them do. I think we offer the ability to bring rigor to many, many of their projects that are supposed to be around innovation and creating novelty. And so I think those are the two biggest pieces of that that I'm most interested in seeing grow within the DSR community. We're always going to have these other debates, you know. Does theory come first or second? How does theory play into it? Are we still a pragmatic discipline? And I think we are. And I think we have to stick to our guns with regard to that. Keep it pragmatic. Keep it focused on utility. Look for the new, the novel. It's more than consultation. It's absolutely about creation. And never forget that. And so I think that's the third part. I want to see more and more excitement about the creative nature of DSR, and I always try to keep that at the forefront, you know, of our dialogue and our conversations. If we do that, I think we can start or continue or even more effectively influence the major trends that are happening in the world today. You know the trends around AI and the application of AI. Nobody knows yet where that's going to go or how far it's going to go. And there's going to be something after AI, you know, so it gives me a lot of confidence that we're in the right place at the right time. I think, you know, the founders of the discipline, including my very own Alan Hevner, my collaborator and colleague, but I really am grateful that so many young researchers are also jumping on board and finding utility in this thing we call design science research.

**[00:31:29] Fabian Tingelhoff**

Very nice closing words. And I think it is also a very nice illustration of your eighth principle abstractions. So thank you so much, Matthew. It was really a pleasure talking to you. And thank you for all those insights. I think they are really valuable to everybody who will ever see this interview. So thanks so much for having the time and joining me.

**[00:31:49] Matthew Mullarkey**

My pleasure, Fabian, and thanks for everything you and the DSR Academy are doing to capture all of this knowledge and put it into a medium that can be shared. Thank you very much.

**[00:32:00] Fabian Tingelhoff**

Thank you.

END OF TRANSCRIPT