Episode 4 Leading with Creativity.mp3
Length of recording: 36 minutes

Transcription notes

Gautam:	Gautam Basu
Jari:	Jari Vepsäläinen

wo-	an unfinished word
(word)	an uncertain passage in speech or an unrecognised speaker
(-)	an unrecognisable word
(--)	unrecognisable words
[pause 10 s]	a pause in speech of at least 10 seconds
, . ? :	a grammatically correct punctuation mark or a pause in speech of less than 10 seconds

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The operations leadership podcast with Gautam Basu provides insights for today's business leaders for creating value with operations improvement process excellence, digital innovation, and organisational leadership.

The following is an interview with doctor Jari Vepsäläinen. Jari is a postdoctoral researcher at Aalto University. He works extensively with mechatronic systems. This is a field which combines multiple engineering and science disciplines, including mechanical, and electrical engineering, computer science, robotics, telecommunications, electronics, product engineering, and service design. This field requires not only engineering prowess, but high levels of creativity in order to come up with novel, and innovative approaches to complex engineering and operational challenges. Jari has also developed sustainable design, control, and autonomous aspects of mechatronic machines, such as electronic vehicles and autonomous driving applications. Jari is a very interesting individual because he's a highly creative person. He's involved with improv acting music and singing. And this conversation talks a bit more about how he approaches creativity, and embeds creativity in his work as an engineer and as a scholar. Hope you enjoy it.

Gautam: Hi Jari how are you doing? Welcome to the operations leadership podcast.

Jari: Yeah, thank you. Thank you Gautam. It's pleasure to be here.

Gautam: Great. So creativity is an interesting topic and it's one that's not often associated with business operations or leadership. I can imagine that creativity is becoming more and more important, especially since we're facing an increasingly complex, unpredictable and uncertain world. So, I think that these require novel

solutions. So, could you tell us a little bit how you got interested in the field of creativity?

Jari: Yes. So I'm a postdoc here at the Aalto University. My background is in mechanical engineering. It is just something that I've come across a lot in engineering projects that is something that I lean towards to create something novel and I don't feel as satisfied when the project is something that is not completely new and never seen before. So then I started thinking, is it something that your born with, the creativity, urge for it or even an act for it? Or is it something that you can learn and master? And I start to dig into that in the literature. And also, yeah my background is in mechatronics so everything from robotics to industrial mechanical engineering things. So anything that is related to mechanics, electronics, coding and computation and putting those together. So it's a very wide range of things.

Gautam: And when you kind of were doing a bit of your research on creativity, were there any let's say books that kind of stood out or spoke to you in regards to creativity?

Jari: Yeah. There were actually two books that I would like to mention. Both are a titled creativity. They have subtitles, but the first one, you can correct me with the name, so Mihály Csíkszentmihályi.

Gautam: Csíkszentmihályi.

Jari: Csíkszentmihályi.

Gautam: Yeah.

Jari: It’s a very difficult name.

Gautam: Yeah I’m a big fan of Mihály Csíkszentmihályi. He actually recently passed away. About two or three months ago. So you know it's he-. I like his stuff about flow, the flow state, so I guess that's a doorway into creativity. I think McKenzie actually did a study about flow state using Csíkszentmihályis work and he actually said that people that are in the state of flow are 600 percent more productive and effective. So Csíkszentmihályi he is a psychologist, but I did, I didn’t read his book on creativity, so what was kind of interesting about that work that Csíkszentmihályi is discussing, wrote about?

Jari: Well, yeah, that was an interesting about the flow because he touched on it a lot in the book as well. He had a lot of people from different field of arts and engineering, science, business, you name it, noble laureates to just business leaders just but air quotes here, but a lot of different people around 200 that he and his team interviewed and there was a lot of talk about this flow state as well and what is what makes a creative person and a lot of people also declined to come as a

participant for the research, because they said that it's something that you cannot really put in the words.

Gautam: Right. Yeah, it's kind of hard, let's say concept or topic to kind of, you know, make it explicit verbally, because some people, you know, they have difficult time describing what is a flow state, you know, the some of the athletes, you know, your basketball player, the zone, right. So it is an interesting, so I can imagine the creativity is kind of similar in that sense. It's difficult to kind of put into to words. So this podcast is about operations leadership. So how do you see the linkage between creativity and leadership?

Jari: Yeah, before I go into that, I will just highlight the other book that I liked about because it's something that you can do, read in afternoon. It's Creativity by John Cleese.

Gautam: Okay.

Jari: So it's a short and cheerful guy from this guy from Monty Python, and it's like, yeah, so it's the obvious stuff in a way when you hear it, but it's good to remind yourself with that, but yeah, then to your question. So as you said before, creativity and innovation are something that are mainly buzzwords when you hear it around leadership usually, and then there are less tools or approaches to actually take advantage of those. And I feel like any business leader, especially in operations, you have policies and procedures that you create or oversee and I see them as great potential places to implement creative measures and just how to be creative in your own work as a leader, how to support the generation of novel solutions and reward those. So this is also relating to teaching. It's difficult to quantify and say implicitly like what is creative and what is not, but we should still try to reward that behaviour. So I think that those are really important aspects of being a leader teacher or a mentor.

Gautam: So, I mean operations obviously and even engineering disciplines, they're, you know, there's a lot of methods or tools like lean six sigma that are, you know, focused theory of constraints. So, coming from the operations world it's very structured and kind of controlled in a way and it seems to me, and correct me if I'm wrong, creativity is more open. So, how do you let's say, embed creativity in kind of the structured way of operations? I mean how do you come up with novel or innovative solutions kind of in a very structured or controlled environment that tends to want to reduce variability, etc, from an operations management or operations control perspective? Is there a way, do you see ways of kind of, you know, fostering creativity from that perspective?

Gautam: Yeah, that's a very good question and especially that creativity is usually thought of as something that is free-flowing and free of constraints and that's true and that tends to refer to artistic creativity. Is least, what I like to call it is that you

don't actually have a problem to solve, but you provide a solution or an output, and then you have something, I have run across the term called engineering creativity, which is, I'll take one step back, is that you have engineering design process that you have a problem or a need, and you provide a solution that meets the criterion and limitations of that problem. But then you have engineering creativity, that is doing the exact same thing. You still have the limitations and the requirements, but you have a sort of additional requirement of doing something extraordinary. Something that's never seen before, and that provides additional value, not only, you know, solving the problem, but doing it, creatively and sort of, this is where it gets tricky, because it's sort of this chicken and egg scenario, because also when you are being creative, you might exceed the requirements and limitations, but it can happen, certainly (thisly), and you might not be able to control it and you can aim for creativity, but sometimes you cannot force it either in an engineering design process. But I guess what I'm trying to aim at is that in addition to your normal work, whether it's engineering or business, you usually aim to just solve whatever problem comes to your way. So what I'm suggesting is to try to identify and acknowledge what is creative, and maybe also intentionally, try to aim for those solutions. And even if they would be more risky, then something that you already know that works. Maybe you could take those into consideration.

Gautam: So if I understood correctly, I mean, the normal kind of, let's say, engineering design, or design thinking is, you, you have a problem that's already there and it's fixed, and you're aiming to solve that in a air quotes creative way. So, in this, in this mode, you're actually, do I understand it correctly that you don't have a specific problem to solve, that It's more kind of a white space or a moonshot where, you know, you're kind of creating, but without a fixed problem to solve, did I understand that correctly?

Jari: I have to correct that a bit because that's what I see that maybe that would be somewhere in between artistic and engineering creativity. When you're also coming up with the problem to solve. I actually that's quite good definition of research I would think, because in research you're trying to find what is a problem worth solving and then focusing on that. So you also need to be creative in terms of coming up with the problem itself. Obviously that relates to startups as well and businesses. But yeah so what I'm referring to is that you're tasked with, there's a need to create a new kind of coffee maker, and you find a solution that fits all the criteria that is put into this new product, but on top of that you try not to do the exact same thing as the competitors are doing. So you're trying to find some way where you can be extraordinary, and the way to do that is that you need to love your problem. So this is probably something that is a common saying, but you cannot assume anything you need to test an investigate, and what I found from the literature is that already like, from 100 years ago, people studied engineering creativity and noticed that people who are paying attention to the tiniest of details are the ones that find the creative solution. So you really need to pay close attention, don't assume that okay well, that was an experimentation error or that is just because customers are, you

know, different, every one of them is different. You cannot make any assumptions if you're looking for an angle or an aspect to be creative on. And actually, then the nice things come along that I found that at first I thought that well being creative is creating something new, right? So you would think that well then it just comes out of the blue, but that's not true. In the end everything that has ever been innovated or created, something novel, it's always a combination of known elements. There's nothing that comes just appears in front of you. It is always something that there's A and B like for example, you had way before you had fire, you must have had someone who discovered, okay, I hit these rocks together, there's a spark and there's wood and wood is great for building a house, but then to combine these two, that's the creative part.

Gautam: That's interesting. And you mentioned this concept of known elements of creativity. So, could you elaborate a little bit more about these known elements?

Jari: Yeah. So you can combine, so known elements are anything. An abstract thing or a concrete tangible object, but how to combine them. That's the thing. Like, how do you then, okay, you have the wood and the spark but how do they come to be as fire? So the one of the things that I found at the core of creativity associations and I have a background in improv theatre. SoI was obsessed about this associations that yes, this is true when I'm on stage that that's exactly what happens when you're being creative. So there's three important methods or subtypes of associations there, serendipity, similarity and mediation and serendipity is the the movie like creativity, and the one that makes the best story is usually. For example, discovery of penicillin was done by Scottish researcher, Sir Alexander Fleming, and he was studying bacteria or viruses. I'm not completely sure at this point, but he had three dishes lying around. He went on a holiday for two weeks, but he didn't remember to put those back into the incubator if I'm correct. And they were just left out at the table. And he came back and the petri dishes were filled with mould and obviously, like if you wouldn't pay any attention, you would just throw away the petri dishes. But he paid attention that wherever there was mould the bacteria, there was no bacteria there and he let the mould grow, and he noticed that it's not affecting anything else other than the bacteria. So it feeds on the bacteria and this is the mould was the species of penicillin and that how the first antibiotic came to be.

Gautam: Wow, that's, that's fascinating. I didn't know the full story about that was, so in essence, it was kind of, by accident.

Jari: Yeah, yeah. And there's actually stories before that there was a doctor studying like horses, like a veterinarian studying how to amend a problems with horses. So there was a horse that had affected ankle or something. And there was the same contaminant in the barn that was dispelling very rare form of mould, penicillin, or penicillin. And and he was mad that somehow the ankle was healing and he told his research assistant to get rid of the mould immediately. And so there is this speculation at least my understanding that penicillin could have been discovered

before, but there was this doctor who didn't pay attention to detail. So you might miss something that you think is a distraction, when that is actually the thing you should be focusing on.

Gautam: Yeah, it's an interesting thing because, you know, something that you may deem as trivial is actually not trivial at all, it's actually the source of the innovation or the solution. That's fascinating. So you mentioned these three elements. So this serendipity the-.

Jari: Similarity and mediation.

Gautam: Mediation. Okay, so what are the other other two? The similarity and mediation.

Jari: Yeah. So in similarity, you think of things that do the same thing but combine just the things that make the specific solution great. So let's say that you had a train that had an engine and the engine part was really great because you didn't need any human or animal effort to move the train. And then you had a horse carriage and the nice thing about that, you didn't need any rays and you didn't need to have this huge train, but it was mobile and small and compact and east to go around and well then if you take the two nice things about them the mobility and then the engine, then you get a car. So I'm not, this is not confirmed. I just throw it out as an example of what similarity could be.

Gautam: Okay. Okay. So it's it's maybe something that Henry Ford kind of looked at and put the similarity principle together and said, okay? Well why don't we develop the model T for example?

Jari: Yeah yeah definitely. And then there has to be also, here comes the aspect of risk, because there was already talked with trains that scientists thought that if you go 30 miles, 30 kilometres per hour, you you're going to die and the accelerations are too much for your body. So a lot of people might have thought of it so conventional to just have a horse and a carriage and it's something that's known already and it's safe. So to take the race of the super dangers engine from the train, and put it into this, carriage took a lot of guts.

Gautam: Yeah, absolutely. And I think this was the same thing with electricity. I mean, the Teslas innovation. There people thought that that was quite dangerous until they kind of proved that it wasn't.

Jari: Exactly exactly. So there's a lot of and also, like it's a good lesson to learn about public acceptance that you might have everyone against you in the beginning, even if you're, you know, that you were after something really great. And yeah, that last one is mediation. So again, this is a made of example, but it could be true. So, Netflix before, now, we know after these a difficult times, that it's our trusty friend in

streaming videos service and films and series. But when it came to be, it was first a posting the films for you at home. DVDs, maybe even VHSs, I don't know how, how long a time was it to go, but at least like a DVDs. And it functioned really well and for a long time, and then Spotify came along, which was the first one to stream music at a large scale, and it was the, at least my knowledge, the most known like streaming service of anything and only a year later Netflix also pivoted towards streaming. So if there wouldn't be any Spotify, maybe Netflix wouldn't done that either. But the mediation here is the mediatory concept is the streaming, so even though the media was different, obviously, nowadays it's already happened, we think that videos and audio are exactly alike. But back then most likely they were not considered the same and they had different problems and different audiences. And the business structure was most likely very different when DVDs were very popular. So making the transition had to be like, again, a risk. But the concept, this is just a very sort of easy to understand example, but what I'm aiming here for is that you need to look into also, how people do things in completely different fields and try to understand that they have their own problem, they have a solution and, and side effects and could some of those be something that you could take into your own field?

Gautam: Yeah, no, absolutely. I mean, some some of the great innovations tend to come outside of the industry or the sector there and they tend to bring it in into their sector. And kind of, let's say embed that and that becomes kind of a breakthrough, you know, and performance or activity cost efficiency from something that seems unrelated at first glance. You mentioned, that you're creative person yourself improv after I know that you've done some music and singing as well. So as a creative person, how would you go about fostering creativity in teams, whether it be engineering or business or operations. How would you, what would be kind of your advice or recommendation for, you know, in either embedding or fostering creativity within teams?

Jari:Well, I think that is something that you, it's almost a nursery rhyme at least to anyone who knows brainstorming. And I think that's everybody almost at this point. So it's about accepting other people's ideas, staying positive. The whole concept of improv theatre works on this yes and method. So if someone is suggesting that, okay, we're on a boat you need to accept that and build on that, top of that. If you're rejecting that and saying that no no we're not, that's gonna stop right there and there's nothing to go on. So the most important thing is to accept what other people are saying. And, and also building on other people's ideas, not only accepting those and treating them without judgement, but also building on top of those. But I feel like, at least I've come across these simple, like suggestions and advices before. And I was more interested in the mechanics behind them, but I have to say it's easier said than done. Even though I'm aware of all of these. It is still always a struggle, you failing, you fall in love with your own ideas so easily, and it's so much easier to see your own idea as a bigger vision and all the stuff you're not saying but you're

feeling about your idea, and then when someone else comes along and they say they are thing, you possibly cannot feel or sense all the stuff behind it.

Gautam: Yeah. Yeah well it's interesting that you mentioned the struggle element because actually going back to Csíkszentmihályi, he said to actually the first stage of getting into a flow state is struggle. You have to struggle through it until you actually get into that state of flow where, you know, the seven or six kind of parameters of flow dimensions going, but you mentioned something interesting. I mean, you know, in terms of, you know, the team environment. So how do you view, for example, interdisciplinary teams, let's say somebody from engineering, somebody from finance, somebody from the arts. Do you think that that kind of strengthens the creative or the novel or the innovative aspects by having different people, you know, coming from different backgrounds, different functions. I mean, in terms of the team construct, either solving a specific problem or as you say the other aspect is, you know, maybe even having a more open or white space type of brainstorming or moonshot. How do you see the diversity element playing into the creative process?

Jari: It's it's very important. So to first off, start off with associations they come from, they can be verbal or visual auditory, you know a sense or smell. I mean something you taste can bring up a memory from your childhood, and all of us has come completely unique palette of our associations of things that you have experienced or you know, about and based on those, you can combine, again, the known element. Something you experience, seen or done. So having people from different backgrounds, not only professionally, but in terms of age and sex and geographic location everything is super important to have different kinds of people meeting up. Now saying that still as humans we are very good at communicating when it comes to small groups. Actually I said that wrong. We're okay at communicating when it comes to small groups, but the more people you have from different backgrounds from different professions, the vocabulary is not the same. You need much more time for the team, building for the team, to get to know each other. At least that's what I think and I experienced a while, working with people from arts and business being an engineer myself, is that it's really important and you get so much more out of things and you get much more much faster to a point that does this work or not, but at the same time then the struggle is much bigger. But that's the thing, the bigger the struggle, the bigger the reward, but you need to, the thing is that if you go through 80% or 70%, 90% of the struggle, the output might still be zero, but if you go you know beyond the needed struggle which no one knows how long is it going to be at the end of the road there's going to be a reward that is you know relational to the amount of the struggle. But yeah, I that is I guess corona is a good metaphor for this as well, that the uncertainty of how long is the struggle then that is the most important quality of all the team members and especially the leader is to handle this uncertainty that you don't know.

Gautam: Right. Right. Yeah. And it makes sense, I mean, you know, that's why it pays to kind of do difficult things and solve difficult problems. And you know, as you said it's directly proportional to the kind of inputs, the effort and the struggle that's required to solve some of these kind of big business, global societal challenges that we're currently faced with. So I think this is a, this is an interesting conversation, a much needed one because I think we need creative novel, innovative solutions, especially to address some of the things we're currently facing, you know, supply chain disruptions. You know, of course you mentioned the pandemic, but so many things that are happening, it almost seems like the perfect storm that's affecting global society. So how do you see like let's say the creativity as a mechanism for addressing these challenges and they could be societal, they could be economic, they could be a technological. Do you see that there should be more focus, for example, in, you know, schools and K to 12 to let's say university level? Because you know, let's face it, I think, you know, in most business schools. I know you're coming from the engineering school, they don't teach creativity as much as maybe they should. So do you recommend that business operations leaders that they should take creativity into account, especially to come up with some of these new innovative solutions?

Jari: That is a difficult topic in a way, because like we said in the very beginning, creativity is difficult to get a grasp on. So the same goes for teaching. So one of my main objectives was that I feel that I like creativity at least and I want to produce and pursue creative solutions, but how how to make others feel that they can do it too? And give them some tools that they can lean on when they feel like they're not creative at all. So then there comes the paradox of creativity, as they call it in the literature, is that there needs to be the right blend of order and chaos and restrictions and freedom. Otherwise, if you go into one end, let's say that you're completely free, like you have employees in the company, you have a team, that's the innovation team that they have no budget and limits, they can do whatever they wish. Most likely they won't be creative or they can be creative, but then it just works for that team. Immediately if you have another team, it doesn't work. And if you look at, for example music you're always having that umm-.

Gautam: Be a deadline for an album or something like that, some constraint.

Jari: Deadline. Yeah. The constraints are really. Yeah, I was about to say a rebel against the machine is always something that is popular and the creativity stems from that it might not even be, also the same goes for, let's say you're at school at any level. Let's say university in this case, and you don't like your course and you wouldn't like to do the things that they're saying you should do. And then you want to change things. So then you end up being creative because of it, because there were the strict rules and limitations and all that also goes into any project. So if you don't have any limitations and it not any deadlines, most likely you won't be creative and I definitely noticed this doing covid, staying at home. You don't have to do anything. I feel the least creative. So some amount of stress in moderate sense and

moderate amounts of stress is good, right? That's the I guess the challenge of nowadays you could choose to do less, and have a lot of freedom in your work or then easily use end up doing way too much, and way too many things, but I guess finding that balance is still that that target that we always all of us are looking for. And like an end node to the listeners, I would like to encourage you to always come up with a lot of ideas because then you have a higher probability of coming up with great ideas, and when you're discussing about ideas, and and what is creative, the problem is that you cannot measure it in the room. So only the public will be the one to estimate the creative quality of your ideas, and that takes time, and you can be creative in your own self. So learning a new craft that is creative to you, and then you can be creative locally. So you come up with the new recipe and the people in your neighbourhood know about it. It might already exist somewhere in the world, but it's creative in your own local area, then you have global creativity. That is actually something that is accepted in a major scale, and then lastly you have historic creativity. And we tend to think easily that we need to come up with one idea that is historic and that is the only way to be creative. So, I like to leave you with a message of hope in a way that you can be creative in small ways as well. But remember, to make as many ideas as you can, because that is the only way to improve your creativity.

Gautam: Great stuff. Thank you so much Jari.

Jari: Thank you.

Gautam: That’s it for this week’s operations leadership podcast. We hope you enjoyed it and up until next time.