So, welcome. Good morning, everybody. One of the things that I like about conferences is that they give you a chance to catch up with old friends, to make new friends, to learn more about what's going on in the product and process development world, new applications that people are engaging with and what they're learning as they go forward. You're able to gain from them. And this LPPD initiative has really grown and really changed since we did our original research many years ago.

Durward Sobek was one of the original researchers and now he and a number of people that started working on this. And it's really grown, it's evolved and it's become better in many, many ways. Last year I talked a little bit about that growth both in terms of geographically ... I think last year we had, I don't know, 10 or 12 different countries represented at the conference.

I don't know what the count is this year and it's grown across many different industries. Aerospace, oil and gas exploration, furniture, automotive appliances, consumer electronics are all applying these principles with great success. We even heard last year from Kendra Leith who was the associate director for the D-Lab at MIT who shared with us her story about how they're applying these principles to develop products for underserved markets around the world and how they're literally having this amazing impact on the people that they work with by first deeply understanding how to create value and then executing against that deep understanding. It was just, it was an amazing talk. We also heard from our friends at Michigan Medicine about how they're applying these principles to develop new clinical processes. It's very cool and Paul Paliani and his team have joined us again this year. They're going to do a breakout session that I think will be awesome and you get a chance to see how these processes work in a very different environment.

And we've continued that work this year. Earlier this year I started to work with Sebastian Fixson, who is the associate Dean at Babson College about how we can apply these principles not only to help educate the next generation of developers, but also to create sort of an R&D function, a product development function and academics to try to keep pace with the dramatically changing needs of their customer base, which I would argue generally academics has not done a good job of. And so we want to create this sort of R&D function to experiment with new ideas about how to provide services and products to meet not only initial students' needs, but the lifelong learning needs that we all have. I also recently started to work with a startup and EV startup called Rivian Automotive. How many people have heard of Rivian? Yeah, a lot of people. It's good.

They sort of rocketed to fame after a number of years of working in stealth mode and they're going through a transformation from sort of this skunk work startup to a real car company. And so we're getting the opportunity to apply some of these principles and practices in a very different environment as we work with a startup. We also last year identified common practices across successful organizations. So irrespective of industry, what were the practices that we saw that made companies successful? And it starts with a deep understanding that people are indeed the most important part of this, a people first attitude where they invest a tremendous amount of energy in the hiring and developing and building of their teams over time. They also work to first understand and then execute. Whether it's a new project or whether it's an initiative for the organization, they take the time upfront to understand how value is created before they start to execute.

And they align around that mission of value creation. They design new value streams instead of products in isolation. They think through each step of the value creating process so that they can maximize the customer's positive experience. They create a framework for success. So this is this balance between enough operating infrastructure to enable the teams to be successful without creating a monstrous bureaucracy that people have to sort of drag around on their backs and they work hard to do this. They're constantly learning and improving, whether it's their products or whether it's their organizational capability itself. They're never satisfied, they're always looking for that next level. They're always asking about what's the next level that we can get to to improve our performance over time. And they have an effective management system with which to orchestrate all that. This year I want to talk about a little bit different kind of a growth, growth within your own organization, expanding your LPPD efforts to include the entire enterprise.

To think about LPPD as an enterprise activity and engaging the rest of the organization in this work, and then even expanding those practices to the way you run the rest of the business. And I'd like to just make three simple points this morning with you. First that LPPD is inherently a cross functional collaborative activity. If you're not working in that way, you will never achieve the maximum value of LPPD. In fact, I would argue that this collaboration is a defining characteristic of LPPD. It's why it matters. LPPD principles and practices working together in this way will result in better products, far better products because you're engaging your entire enterprise, you're getting the input, the creativity, the experience and the knowledge of the rest of the organization. And that working in this way will also have significant benefits for your organization. This collaboration and transparency can extend to other activities in your organization and as the other speakers talk to you over the next couple of days, I'd like you to consider these three points.

And so I think you'll see kind of a constant theme about how we engage the enterprise in this work and how important that is. I want to start my argument with the idea of creating value, right? Value is something that we talk about a lot in the lean community. It's sort of a first principle of lean is creating value, eliminating waste, but what's oftentimes overlooked is it's your product that represents that value.

So whether your product is a process or a service, software or hardware, that's the value you're creating, that's what represents value to your customer and it's critical to engage the entire organization and understanding what that value represents, what it is. And oftentimes if you don't engage upstream in the development process, what we call Kaizen is really rework. It's fixing stuff that should have been much, much better coming out of the development process. Yeah. Worse than that is that if we do our rework, if we do our Kaizen in isolation, if we do it just within functions, we run the risk of working at cross purposes, one person's value is another person's waste. We can get this great cost reduction, not realizing that we're actually stealing value from the customer, without that common understanding. Worse than that, you could be doing all this rework to a product that shouldn't exist to begin with.

So we have a solution to that. I feel like an infomercial, we have a solution to that. LPPD aims to create new value streams, it intentionally designs each step of the value creating process and we build that right into the development process. We build it in up front during the study phase when cross functional teams come together under the guidance of the chief engineer to deeply understand what value needs to be. We do it when we create the concept paper and we outlined for everybody to understand how value is created by this particular product. Yeah. And probably most importantly, the principle of compatibility before completion that we apply during the development process itself synchronizes activities so that you can engage with the various stakeholders in this process. So whether it's manufacturing, installation, serviceability, whatever portion of this product that helps improve the customer's overall experience, we create integration points, we synchronize the way the work is done, so that they mature simultaneously. So you have the right input at the right time during the process.

And so we have access into this process for everybody in the organization. But as important as this is, this process work is necessary but not sufficient, we need to find ways to engage with the team, to create face to face communication opportunities. Co-location is a great way to do this, but it's not always physically possible, especially nowadays with distributed engineering. And so one of the ways that we help to enable this partnering and transparency and collaboration is through Obeya standups, whether they're daily or weekly, bringing the cross-functional team, creating a center for the project, a home for the project where the team gets together on a regular cadence to share updates, to have debates, to discuss how the project is going forward. One manufacturing engineering manager that I talked to, very experienced person, said that the first time that she ever really felt like she was part of the team was through this Obeya work.

She actually had a seat at the table. She was able to influence this value creation instead of sort of having this product inflicted on her and her colleagues when they went to manufacture it. And so it's not only a great experience for your product, it's a great experience for your people. Monozukuri tear downs are just how you evaluate your and other products in a cross functional way. So you get multiple perspectives on the best way to create value or cross functional Gemba visits early in the program. Again, the Michigan Medicine folks have started to do this by engaging with their stakeholders, by visiting the place where these processes are carried out by talking to the doctors and the nurses and other people that are important to the process, to enroll them in this work, make this work theirs. Create some ownership in the way that they work on it.

And I would argue that by engaging people in this way, by making the most, leveraging their knowledge and creativity and experience, the result will be much, much better products and greater value for your customer. But funny things happens when you start working this way. When you start partnering and collaborating, working in a transparent way, sharing information, focusing on value, people actually like to work that way, they don't want to go back to the old way. They want to continue to engage this way.

And so there's an opportunity to bring these practices to the rest of the business, the rest of the activities that you engage in in your organization. And what we've found when we do that is it changes people's perspectives. They have a different sense of their role in this bigger mission. They have a shared vision of what value is and it fights against this sort of local optimization, this temptation to focus on maximizing efficiency within your function and think about system optimization. How do we all work together to create greater value? Because your perspective has changed. You've created this sort of actionable, true North for the organization to move forward with.

It's not hard to get started. Just reach out, lead by example. Just reach out to your colleague, talk about how we can work differently. You don't have to call in the consultants. You don't have to have a big initiative. Just think about how you can work better together. Start small, do a pilot, just like a pilot line of manufacturing. How can we do the experiment as Jim Womack is always asking us to do, how can we learn? What's the simplest way to go forward?

If you're not practicing collaborative development, try to do a pilot on a program, just pick a couple of LPPD principles like Obeya, like compatibility for completion and test them on a single project. If you can't do a project then just do one concurrent development team, one subsystem, one portion of that project, and start learning how to do different. If you are already working collaboratively in your development process, congratulations, but think about how to expand that to the rest of the organization, can you start a match pair initiative, which Susan will talk more about? Can you establish a cross functional steering team? Can you take the lessons that you're learning from your development teams and apply them to your senior leadership? But the important thing is to do something, to try the experiment, to understand that it's not going to be perfect.

It's going to be awkward. It's going to be clumsy and difficult at first, but commit to PDCA, continually improving. And that has two benefits. The first one, obvious one, is as you work to improve the work, it gets better, you get better at it. People start working those muscles and they're used to working in this way, but the other thing is that if you do that as a team, you build ownership of the process. The work becomes our work, not something that the [inaudible 00:16:05] people brought in, not something that some consultant brought in. It's our work. We're working together to improve this over time. And to sustain it, I would argue you need an effective management system and for those of you who are not familiar with, at least my view of what a management system is, is that a management system equals leadership behaviors times your operating system.

Your operating system is what you do. It's your tools, processes, cadenced events, the meetings you hold, leader standard work. Leadership behaviors is how you do it. And the way those work together is, if you think about Obeya standups, the point of that is to create transparency and identify issues early in the process. You're trying to create something like a production line where the worker has the lines on the floor. Have you ever been to an assembly plant and seeing the lines on the floor and the worker has standard work that they're executing and when they get to the 50% line and only 25% of their work is done, they do what? They pull the end on, they have an abnormal condition, they pull end on, the line doesn't stop. That's the last thing you want. The team leader comes over and tries to help fix it within station. Effective management systems, I would argue, do the same thing in much more complex environments.

It's a way to understand normal from abnormal and to react and that's what you're trying to do with an Obeya. You're trying to create transparency, you're trying to make invisible work visible and you're trying to meet and look at it each day to see if you have an abnormal condition.

But if you have a great Obeya but the first time somebody surfaces an issue, they get a wire brushing, they get punished for bringing that up, then you're not going to get transparency going forward, right? People are going to clam up. You only had to do that one or two times and you can ruin the whole thing. And so that's why these tools and these behaviors have to match to be effective. And I would argue that the management system is what drives your organization. It's what sets the tone for your culture. It's the most important element of maintaining this sort of collaborative environment that we want to, that we want to set up. And so some companies that are doing the experiment include Schilling, which is our next speakers. They definitely believe that it's okay to be red, but if you look at the center lower picture, they have a interesting way of convincing you it's not okay to stay red.

So Schilling started to apply Obeya principles in the development of their Gemini program, first one, and had just excellent results. They brought the cross functional team together, they were able to collaborate and it was just a great way of working and it started to catch on in the rest of the organization and so Manufacturing I think was the next one to start an Obeya and it started to grow throughout the organization to the point now where the executive team has an Obeya. So the president and his direct reports have set up a management Obeya for managing the company. And they set them up sequentially every Monday, so that [inaudible 00:19:26] they start in PD and then work through manufacturing and so you can progress through these Obeya meetings during the course of the day and get a huge slice of what's happening in the business.

It also provides a really natural escalation method for surfacing issues right up to the senior leadership team and while it's relatively early days and they're working through some kinks, I think this approach to management has a lot of potential. Another area where we're doing the experiment, I mentioned I was working a bit with a company called Rivian. I, about five weeks ago, agreed to take on a role as interim COO. And we're sort of transforming the company from a startup to to an auto company. And one of the things that we've put into place are concurrent development teams. So we've actually organized the supply chain folks, manufacturing and product people around specific vehicles subsystems, say underbody or front end systems. And they actually work together on those systems real time. And it cuts out a lot of, not only does it lead to much higher quality of work because you have a broader understanding, but it's much quicker as well.

You don't have to send emails back and forth, you don't have to wait for the next meeting. The person you're working with is right there, so you can get real time feedback from all those perspectives. And we've started now to bring those same practices into our weekly operating team meetings. So the senior leaders of the company get together once a week and we're trying to operate in the same way we're trying to make sort of delivering value, the centerpiece of how we do our work, and learning from the concurrent development teams. Another experiment we're running, if you look in what would be your lower left hand corner is desert line dancing for team building. The results on that are a little more mixed. So as we know, when we engage in product and process development, we're literally creating our future. Because many of those decisions that you make during that process will impact you for a long time to come. What I'm trying to stress today is that's a shared future that you're creating, so why not work on it together? Thank you very much.