

## Transforming Customer Lifecycle Services for Fortune 500 Manufacturer

**[04:35] Jeanne Grunert:** Welcome, everybody. My name is Jeanne Grunert and I'm the Content Marketing Director for rSTAR Technologies. I'd like to welcome you today to our webinar: Transforming Customer Lifecycle Services for a Fortune 500 Manufacturer.

Our webinar today will take about 30 to 45 minutes. At the end of that time period, after our conversation with our special guest, we'll have a lot of opportunity for your questions. When you're ready, at that time, I'll invite you to tap the QA button at the bottom of the screen and you can post your questions there.

Now, if you're new to rSTAR Technologies, we are a full-service systems integrator with special expertise in manufacturing, energy and utilities, and other asset-intensive industries. Today, we welcome one of our manufacturing all-stars to our webinar, Bryan Schappell of Emerson.

Bryan, welcome to the webinar. We can't wait to speak with you and learn from you today. It's good to have you here with us.

**[05:31] Bryan Schappell:** Thank you. Pleasure to be here.

**[05:34] Jeanne Grunert:** So, Bryan, tell us a little about yourself and about your role at Emerson.

**[05:39] Bryan Schappell:** So, I've been with Emerson roughly 28 years. I started with Emerson in manufacturing, but I've been in the IT industry for—well, since the 80s. Way back before we had many of the advantages we do today.

My role with Emerson transitioned from manufacturing, implementing lean practices in the manufacturing environment into software and software development as I reengaged with IT years later.

So, I've been working most recently with their digital customer experience, which is the customer life cycle services and the digital customer experience tie-in, which is really developing tools for our post-sales activities, which really is for the customers as well as our support organizations.

And if you know anything about Emerson, we have products that live in the field very long. I mean, they've got a long-life cycle. And as a result, you've got products that came from many different ERP systems from companies that were part of the organization but were acquisitions later. And therefore, the complexity can be very intertwined at times and difficult to deliver a single solution to really represent that.

**[06:50] Jeanne Grunert:** So, it's interesting, this journey that you went on over time and transforming your customer life cycle services center and transforming a monolithic platform into a really flexible customer and field service focused platform. How did this all begin? What was the problem that brought you to saying, hey, we need to find a solution here?

**[07:13] Bryan Schappell:** Yeah. And basically, we had a very strong oracle backbone at Emerson that we utilized. And that was great for our system of record, and a lot of our order management, financials, inventory, transaction were really heavily based in that environment.

But we still have a lot of other ERP systems that we utilize around the world. We also acquire additional organizations that fit into our portfolio products on a semi regular basis. And as a result, you end up with a problem where not everybody can be in one environment, one system.

And that creates a challenge when it relates to delivering a more advanced customer experience. And obviously, Oracle is always going to lag depending on which ERP version you're in, they're going to lag in the customer service and user experience side of things, which is an area where we want to really differentiate ourselves as an organization.

So, what we looked for was ways to use that backbone, that strong system of record and leverage then more innovative solutions in a microservice and cloud native sort of environment to deliver solutions to our users that were much more advanced, much more modern.

**[08:28] Jeanne Grunert:** So how did you end up coming up with this approach? What was it that you did on your end to start to solve this problem?

**[08:39]** Yeah, a lot of it was just looking at what was going on in the world. The fact that most modern applications today are communicating through API interfaces that are much stronger. They can deliver information that's public in nature. And you can utilize that if you've got more of a microservice architecture to interconnect things.

And then, like I said, it also allows you to connect to multiple ERP systems because now you're not really dependent on one particular formula for things. You just have to make sure that you can accommodate the contract between those applications appropriately.

**[09:17] Jeanne Grunert:** So, you looked at apps that were out there and the APIs and how they worked and then explored, I guess, best practices. But not necessarily in your industry, right? Because I remember we were talking about that.

**[09:27] Bryan Schappell:** Yeah, not necessarily in the industry. I mean, if you look at the example is, we're field service in many cases. So we're going out in the field or we have customers coming to our website, but they're doing it on their mobile device, scanning a QR code or whatnot. They expect the experience that they see in the rest of their applications. And you're not going to be able to deliver that when you're tied to a slow-moving ERP system. You're not going to be able to deliver the latest technology, the latest interface that's available.

But you can in a cloud native layer, you just have to make sure that you're connecting then back to your layers of ERP as needed and learning how to do certain things offline, certain things online. But getting that user experience to our

users and being able to iterate on that a lot faster was really the key to really us driving forward.

Like I said, people constantly were asking us to look at additional systems for delivering service. Look at this company, look at that company. And what we kept finding is they always had a piece of it, but they were going to be slow to get to the next level.

And that was really the challenge is how do I get myself around that and not be tied to a large monolithic framework, but use the value of that monolithic framework and deliver a more, like I said, innovative space.

**[10:47] Jeanne Grunert:** I can imagine it must feel like you're trying to move a mountain of sand with a pair of tweezers, right? when you've got all of these things that need to be done. So how did you start the approach and where did rSTAR come into this whole process? How did you begin to move that mountain with the tweezers, so to speak?

**[11:04] Bryan Schappell:** Yeah, and it's a good question. One of the things that's key to the transformation was really using partners like rSTAR to deliver what we consider trusted value workers or knowledge workers. People who really understand the technology, have worked in other fields and other applications over the years and then have a strong management team behind that. These people can become then part of our team, which as we've got into the Agile transformation, we've got a medium-sized team of about 65 people, including the leadership of the various team organizations.

But having that ability to flex up fast, bring in really good knowledge and experience, really helps us then take kind of an independent view. And a lot of this isn't just because we're the smartest people in the room, because we're not, but we bring together people who are. And collectively, you end up with a much better opportunity to solve problems and be innovative, and even try things and fail, which is the other side of that is, you won't get it right all the time. But if you're doing it in smaller pieces, you get to move faster and you get to readjust based on a failure or a success much more rapidly.

And the users tend to very much enjoy that. They see that movement and even the rapid failure as a positive, not necessarily a negative.

**[12:30] Jeanne Grunert:** And I understand that before you started this project, Emerson was really into a Waterfall approach, right? And for those who may not be familiar with it, maybe you can explain the difference between where you were then and where you are now and why that was so critical to the success of your project.

**[12:47] Bryan Schappell:** Emerson still has a very strong Waterfall software development practice. And for certain projects, this still makes a lot of sense. And it's very built or heavily built into gate reviews. So, basically, you're doing a bunch of work to a certain stage and then you're reviewing that. And everybody's providing their sign-off.

You're making sure security and compliance and performance, and you name it, has done their review of what you're doing as a project before you can go through the next phase of work. And you keep kind of working through that Waterfall of activity. And you stop basically to get everybody's approval to move forward.

Whereas, going into Agile was really more about decentralizing a lot of those activities. So instead of having a large gate where I'm reviewing activity I've been doing for maybe three to six months and saying, I'm ready to move that to the next step, and security can spend weeks and evaluate how they feel about what we're about to move.

They have to be part of the day-to-day process. And that's difficult for an organization like Emerson. How do you decentralize that? How do you embed people into the teams or into the actions that you're doing so that they're part of the day-to-day discussion and building in quality and security and performance into everything that you're doing?

And it is an ongoing challenge based on the size of the organization you have with like Emerson where they've got very strong groups around security and performance and data management and such.

**[14:14] Jeanne Grunert:** I liked one of the things that you said to me earlier. And that was that using Agile approach allowed you to sort of test things and see what was working and see where something wasn't. Is there an example of a project that you could share or any takeaways maybe for people like when you transitioned from that sort of gated and Waterfall approach into the Agile approach, how did allowing

your team to sort of experiment or experiment with different solutions, how'd that impact it? No problem.

**[14:44] Bryan Schappell:** Well, a good example for us honestly is the use of our mobile solution is really based on a progressive web app design at this point in time. And one of the challenges we ran into there, we were trying to replace a piece of legacy software that was very costly to maintain and it was very difficult to be innovative in that space.

What we found though is we have this need to be online and offline and we wanted to use in this case, MongoDB. The challenge was there was no example out in the field that we could find where that was done well with the offline and online synchronization.

And so we ended up iterating on that. We almost or thought we were going to actually have to throw a good part of it away and start over because we couldn't get past that solution. But the team struggled through it, you know, through a lot of innovation, but it was really at the core developer level.

It wasn't leadership and architecture saying, "This is the path for you," and everybody following along. It was the developers saying, "I'm going to make this work. We're going to figure this out. We're going to try some things." And they found some solutions that weren't documented out in the world and even the groups that utilized MongoDB were actually pretty impressed with the results that they came up with or the...

**[15:59] Jeanne Grunert:** That's neat.

**[16:00] Bryan Schappell:** But it was really interesting to see.

**[16:00] Jeanne Grunert:** You really are an innovator. Yeah, I mean, you really are an innovator when the group that runs it comes to you and says, "Well, what'd you do with our stuff? That looks great. Can we talk to you about doing that?" That's awesome. It's wonderful.

So, you have your field services and they're going out and they're serving customers. And I know again that when we talked, there were certain problems that were coming up regularly with having a disconnected field service or having some of these sort of Oracle processes be signed over here and maybe they were out in the field and they couldn't communicate easily with the ERP platform.

So having this microservices architecture and these native apps, I think helped you solve that problem. But what were some of the problems that field service was encountering out there that this new approach helped you solve?

**[16:50] Bryan Schappell:** Well, a lot of the problem is not being able to see their data. We've got in the past many different applications. So, you've got field service apps that are mobile. You've got applications or Oracle ERP systems that have a lot of information.

And if you're not logging into Oracle, which is very difficult to do at a customer site, especially many of the customers we work with, you're challenged in the information that you have. And what happens is you're not the most knowledgeable person about that piece of equipment that shows up at that site. That's the downside to our sales organization, our service organization. We need them to know as much as anybody or more.

And so, the ability to connect those applications and pull information from many different sources into a central experience—but not just one experience, and that's really the key. We're not trying to build an application that says you do ABCDE. We're building an application that says, well, if you're ready to do D, you can get what you need in that application space.

You don't really have to think about it as an application you're logging into, even though it may be built that way through microservices, you're just looking to do the function. You're looking to find the information from where you're at currently.

And that's really what this layering of microservices and APIs helps us really do is deliver multiple experiences around a single set of functionality.

**[18:18] Jeanne Grunert:** And what was the reaction of the field service team when you wrote this out?

**[18:20] Bryan Schappell:** They've been very positive about it. As we've released additional pieces of this, and it's a journey, like you said, you start small because you can't tackle it all at once. It's not a big bang implementation.

They're seeing additional pieces all the time come forward. And that has been really fun to watch because they're much more involved in the feedback. They're much more involved in getting out of their old paradigms. They used to ask us to do things but they fit into a box. We predefined that box over many years of what we could do or couldn't do.

And now they're starting to get outside of that box and they're saying, "Well, what if we did this? What if we could do that?" And they're asking us about the outcome not telling us how to solve it, which is what they were doing before because they knew what our limitations were.

Now it's a lot more open and the conversations go wild sometimes. And with the scaled Agile approach that we utilize, we have an innovation sprint where we literally will take those ideas, throw them out at a wall, and somebody get to play with it for a while. See what you can come up with. Maybe it's nothing. Maybe you can't break this paradigm, but can you?

**[19:28] Jeanne Grunert:** And that leads to then the what ifs. And it lets people's minds expand beyond what's that box, right?

**[19:35] Bryan Schappell:** Yeah.

**[19:36] Jeanne Grunert:** So, they can start imagining what if I had that or what if we applied what I've seen at this place here or something like that. And then you can figure out how to do it. Once you know what the problem is and what you desire, then I think you can come up with a process to build it and work with partners like rSTAR to do that. So that's a wonderful thing.

So, in all of this, we started here because your domain is customer lifecycle services and field services. So, have other groups within Emerson looked at the work and started tapping into some of what you've learned from this or are you sharing that? How has it spilled over and positively impacted those other groups within your company?



**[20:15] Bryan Schappell:** A lot of groups at Emerson really digging into this layer of how do you create an innovative layer instead of everything being done down in a monolithic environment? Plus, how do you really capitalize on the cloud native and open-source development tools that are out there today?

And we're doing a lot of learning. I mean, we're learning how to keep things current, how to containerize things better and better and really harden the APIs so that there's security well baked into everything we do.

So we've got multiple groups, they're coming together. So we've got communities of practice across Emerson where key individuals will join those calls and really collaborate and talk about the best practices and how they can share that information.

So as an organization, I think we've done a pretty good job embracing this type of change and some are further along than others. But the one thing you notice is that everybody seems to have strengths in different areas.

And if you know anything about a journey like Agile, you're never going to be perfect. You're never going to get to that utopian, everything's just running perfect. What you find yourself doing is constantly learning, constantly improving, and you can use all of those others, if you're not too competitive, you can use what they're doing well in some areas and they can use what you're doing well. So it becomes a very collaborative sort of opportunity for an organization.

**[21:43] Jeanne Grunert:** So it sounds like you've made a lot of different inroads in this, this new flexible approach. What would you say has had the biggest impact? Is there any one particular place where you've been able to sort of move the needle with the microservices approach or an app that you didn't expect any surprises there or super positive outcomes that you're like, "Whoa, I'm glad we did That. hat looks great!"

**[22:09] Bryan Schappell:** Well, after all, our data mart has been one of the biggest areas. We basically abandoned a lot of the old monolithic install base environments, whether it's Oracle, whether it's coming out of SAP or many other systems and MS Dynamics, we've got them all over the place.

The problem we face as an organization is bringing that together because our products are very complex. And even though they look like a certain format today, they may have looked very different in the ERP system 20 years ago, but I still have to service that, I still have to bring that together.

And we took an approach of building an external environment that's fed and uses the information from all of those other install base areas, but it's allowing us to really centralize the information and the activities around those assets that we have in the field in ways that we didn't see the acceleration being that fast.

And as we've got millions and millions of products into that environment that are very, very unique and different, we're now plugging in, like I said, all of our applications from service and down into our system of record using that information back and forth, but it's allowing us to have, like I said, that single view of what's going on.

And if I'm in one application and I need this information, it's easy for me to get. If I need this information, it's easy for me to get. It's not necessarily all in one place, but we know how to get to it through one place.

And that becomes really the opportunity that we really didn't realize how instrumental that was going to be. And I think the fun part of that is seeing the organization who tends to be resistant in certain pockets of using, "the standard process."

They've been a lot more open to that number one, but also, they're coming to us and saying, "Well, we've heard we can do this and this if we use your solution." Instead of fighting us and saying, we want to use our own solution or build our own.

So, they're understanding that there's more value on the table that they are not getting if they don't use some of these advantages that we've already put out there for different parts of the organization.

**[24:20] Jeanne Grunert:** And has this allowed you to be a little bit more proactive with your customers in ways and serving them better?

**[24:26] Bryan Schappell:** Oh, yeah, for us, it's a huge win in that area because once again, we know more about product than anybody including them. And that's really

the key is being able to tell them a little bit more about what they could or should be doing.

They want to know. They're losing their experienced engineers at a rapid pace because there's people retiring. There's a large number of people retiring and they're not bringing in as many, and those that they bring in, they're focusing in other key areas, not at the instrumentation level necessarily.

So, they need somebody to come in and tell them a little bit more about what they should do because they're more than happy in most cases to do it. They just don't have a source of the information and this does allow us to do so much more of that.

**[25:12] Jeanne Grunert:** And when you say doing so much more, what would that look like in the field? Would that be proactively contacting them when their equipment needs servicing or things like that because you have the data or you're already doing that? Like what does that look like, I guess?

**[25:24] Bryan Schappell:** Yeah, it's, what do you need for parts for this when you're going to do a maintenance turnaround? What do you need as a replacement if something goes wrong with this product or if you're duplicating this particular production line?

What is your roadmap over the next 5, 10, 12 years for maintenance, parts, support, etc.? We can draw that out a lot more effectively, knowing the products that they have at their location, as well as the additional information we know about when it's been serviced, what's been done to this product, what type of application is it in?

All of that stuff coming together brings us a lot of information. You don't get that if you don't connect the tools, because all you know is that you shipped it. Oh, that's great, but I want to know when it wasn't serviced?

If they touched it last time, what did they learn about that particular product as they were doing work with that or with the customer in their processing unit?

**[26:21] Jeanne Grunert:** So, it sounds like out of all of this work, you've over the course of time, have really transformed customer life cycle service. I mean, that's the title of our webinar today. And it really does sound like it has been a transformative

experience by being able to bring the back and front office together by connecting the systems and then by improving the ability to scale up scale down, add components or not with the microservices architecture.

If you were to guide somebody else who's looking at this journey and saying, I've got something similar to this, I've got a similar problem. Where do I begin? How do I start? Like you're talking to a peer right now who might be in our audience. What would you say to them? How would you advise them? If they too were facing a similar project?

**[27:07] Bryan Schappell:** I think the key is you've got to start making decisions quickly about who owns what information in general. Like, whether it's service information or repair information, or in our case, asset information, as we talked about a second ago. If you understand where certain pieces of that information are owned and you can build an API around it, you've now created an acceleration for every other application to consume that information in ways that you don't even realize. And it's a starting point.

And what's likely going to happen is you're going to throw that API away at some point because you're going to realize it was incomplete. You designed it not quite right because it's a learning experience.

This isn't stuff you're great at, right out of the gate usually. And some are better than others, but I'll admit, we've had to replace a number of our APIs that we built. We got a lot of value out of them, but then we've upgraded them to something much more effective.

But that ability to get started helps everybody start changing their mind about where you're going. What are you trying to do? How are you trying to connect these applications? It isn't anymore, "I need this information from that application." It's, "I own this information and I'm going to make it available to whoever needs it in our ecosystem." And now they can choose how to use it, which becomes like I said, that's your accelerator. You're not defining how it gets used. You're just making it useful.

**[28:29] Jeanne Grunert:** And are they using the information differently now? And I know your department is because you've talked about that, but are other departments and which departments are able now to tap into this and change some of how they're working?

**[28:40] Bryan Schappell:** Yeah, we're seeing this all over the spectrum because obviously our service organization can use this information, but our sales teams are now using this for proactive sales opportunities. They know the information's there. They're learning how to understand what it is we have and connect to other systems and intersect.

Our customer care organizations, both in chat on the phone and email, they have ways now to pull up information that they've never had at their fingertips. And it gives them the ability to get deeper into the experience.

In the past, they'd say, "Well, I don't really know what's going on with this or I don't know the history of this particular asset, but I can get you in touch with somebody who can," and sometimes that stays or even weeks before they do get in touch with the right person.

Well, it's a much different conversation when they can open that and see what's going on. This is the latest, I can tell, is going on with your asset. And many times, that's the end of the conversation. That's all they wanted. That's all they needed to know.

Other times it takes us deeper into a conversation, but we get them to the right point of contact instead of a generic point of contact who's going to go mine knowledge about that particular asset or set of assets. So yeah, it's really transformed a lot more than just the service organization by any means.

**[29:55] Jeanne Grunert:** Yeah, it sounds like the greater the flow of information, the more people can use it and then the better they can improve what they do and they're part of the project as well. And that always results, I think, in better service for everybody and better everything for the end client.

**[30:10] Bryan Schappell:** Yeah, definitely.

**[30:11] Jeanne Grunert:** Your goal is to make sure the customer served really well. So out of all of the apps that you've put in, we've talked about a few of them, is there any one in particular...? I think we talked about this before, but sounds like you

talked about one, was there any one that was especially challenging that rSTAR helped you with, that you were like, well, we didn't know that we could do this or anything like that? Or was it all, you know, here's the goal **[inaudible 36:35]**

**[30:35] Bryan Schappell:** Obviously, the Progressive Web App was a deep challenge for us. The other one we're working on is really the user interface layer that connects to our ERP system. And that's continuing to be a significant amount of work and a heavy lift for us getting through that.

But it's really about creating a layer of experience and innovation above any ERP system we need to connect to. And we have some challenges over the next few years, the next five years probably, of evolving our ERP systems. We've got some acquisitions coming in.

We can't afford to have our service organization constantly changing the tool they're using. We need them to have some consistency at that layer. Plus, we want them to have the best and the most useful tools in front of them.

And so that layer of innovation and being able to then connect properly down into other information about the asset and the inventory, the financials order management, etc, is so critical to our organization. So this is a longer term journey that we're on, for sure. But it is definitely some significant heavy lifting.

**[31:43] Jeanne Grunert:** Yeah, I was going to ask you as a follow-up question to that, like what's the next step in the journey? It is a long-term journey. This is not something...It's a marathon, not a sprint as they would say, right? So it's not something that you can do overnight. So what areas are you evolving now?

**[31:58] Bryan Schappell:** Say that again.

**[31:59] Jeanne Grunert:** I said, what areas are you evolving now? Where are you moving now in that journey of adding these different functionalities to your system and empowering different teams?

**[32:08] Bryan Schappell:** Yeah, it's addressing more pieces of the experience. Today they can go into these various and ERP systems and do certain functions. And so what we're doing is one by one, pulling those out into this decentralized layer.

The other thing that that gives us too, and this is kind of the carrot instead of the stick is to say, well, when you move out here, you get all of this other information. If you stay in this ERP layer, all you know is what it knows. You can't bring in that other information as easily. I can't make it available and I can't change your experience around that information.

But if you want to know the history, if you want to know get to the documents faster than the, any of the service documents, the calibration documents, all of the stuff that's so ripe with information, I can give that to you.

Plus, the other thing I can do is, since I already know about that asset in other systems, I can solve the administrative nightmare that service lives with today. They type in or key in so much duplicate information every time they go out in the field. It's so sad to watch because they're paid to do a job that has nothing to do with data entry. But that's what they're doing a lot of the time is entering data and trying to record the information that they need for billing and other purposes.

And they shortchange it because they know it's not going to get used. They're never going to get back to that information. It's never going to be useful to them. And we're seeing that change as well where the accuracy of information, the completeness is improving constantly because they realize, I'm going to get to see that and use it again. So, it's no longer a throwaway piece of information I'm giving you. It's actually going to be useful for something.

**[33:54] Jeanne Grunert:** Yeah. I like how you said that. It's not a stick, it's a carrot because so many times you think about these projects and people are always kind of nagging you to do your part of the data entry or you have to do this or the other thing. But you're giving them a reason to want to be invested in this. You're giving them absolutely like, "This is great, guys, this is what we want to get to."

And that kind of brings me to a thought about living through this process as part of your company and sort of nurturing people and moving people through that change of mindset and moving people through that change of how one does things within your group, within your department, within your area.

So, was it hard to get people involved in this at first? Or were they eager to do it because they saw how difficult and challenging it was to do their jobs before you started changing things?

**[34:44] Bryan Schappell:** Yeah, I think it's any change you're going to run into problems. This one is more significant than others. And many people that were involved in it were very tied to the Waterfall processes that we had. So getting them to move forward, obviously we did a lot of education, but that doesn't help because nine times that all that does is it gets you terminology changes. They change what they're calling something but they're actually still doing the same process. And that really isn't the transformational change you're looking for.

So, in our case, we had very strong leadership support. That was great, because that helped us with a lot of the challenges where we would go to a group and we'd say "We need to work with you to decentralize this." And they would feel the need to try to help do that. That was very, very big.

The other is really driving out fear, in my opinion. That's one of the most critical things. When you do this, you're going to stumble a lot. You're going to have measures that don't look pretty. And especially when you're a group—and not to sound harsh, but you're a contract group, you're paid for success and results. You want those measures to look good for us. But what you need is to get rid of that fear by being honest, transparent, admit our shortcomings and then learn from them. Use them as learning opportunities.

But if everything looks good and perfect, then that means you're not making progress because you're not even telling yourself the truth. Are you really achieving the results that you expect? Did you predict what you were going to do for the next 10 weeks and actually come close to achieving that? Or were you sandbagging and you really weren't as—I guess you weren't trying as hard to really challenge the group outside of their comfort level a little bit.

And those types of things become really fun to work with. But once again, how you respond to the shortcomings, how you respond to the challenges, I think is one of the most important things because you will see people hiding information, hiding their bad results just because there's still fear in the organization, "I'm supposed to achieve a number. Well, if I don't show that and I can probably manipulate the data to show it, then I've got a problem." Well, that's not good because it really isn't giving you the results you need.



So, I think that to us has been really important in taking members like the rSTAR team members and really bringing them into our culture, our organization as partners. They work alongside our employee developers, our employee architects.

We have architects from rSTAR. We have a lot of leadership partnering together. And if they can't work together, we work on that respectfully exchange of information and collaboration more than anything because that's the most important thing to driving this forward because I can't lead them all. I just don't have the time.

**[37:32] Jeanne Grunert:** Yeah, but I think part of leadership is what you're getting at. And that is that it's allowing people to have the, what they used to call psychological safety, but allowing people to have that feeling of, it's okay if I don't hit it perfectly out of the gate. It's okay to show something in the middle and get feedback on it, which is it gets back to the Agile approach versus Waterfall, but you have that end goal in mind. And if it's not perfect, you feel tense about it.

**[37:58] Bryan Schappell:** And we all learn this in various management training through our lives. But when you do that, they work actually harder for you. And the truth is very obvious in the results that you get.

The second that you are willing to help somebody through a shortcoming or not beat them up, so to speak, because of a missed goal, it changes the way they respond drastically. And they work a lot harder than they would have worked if they...Even if they had achieved the goal, I think you get much more buy-in.

**[38:29] Jeanne Grunert:** Yeah, it's amazing with that. So, looking at the whole project so far, and we talked about the challenges that you faced moving into it, what you did to solve those challenges. And we talked about the outcomes from it. Now we're moving into the future. And you said, well, future is development and delivery of the next generation of these things. It's tweaking, it's refining, it's moving in that.

Looking across the field of sort of where your industry is going, is there any area that you're hoping to explore with this to improve customer life cycle services even further?

**[39:07] Bryan Schappell:** I think our biggest opportunity within our organization, and this is probably sharing some of the undercover dirty laundry, but we have to connect our internet of things, which we do pretty well with our service and repair activities a lot more closely.

We typically don't do as good at a job as that as we could. And so we have kind of a splintering of information and capability where once we marry those together, I think the sky's the limit. So that's really the next big thing for us is saying, okay, so how do you make those two work really well together?

Not just sharing information, which is one of the things we're doing now, because that's one of the groups that has come to us and said, we hear you've got this information. It's like, yes, we do, we've got all this information. All you got to do is query it through an API, tell us what information you're looking for and if we're missing something, we'll probably add it.

But they're doing more with that. But once we really get to the point where I can actually say, "Okay, I know a service maintenance frequency, I know a repair frequency that's based on your application and whatnot. Oh, and by the way, I can see how your product's running."

We know more about what that product is telling us than anybody in the industry. We know what's going upstream, we know what's going on downstream. Well, all of that becomes just incredibly ripe information for driving the next step of proactive maintenance.

I know you've got a problem brewing, here's how I can kind of know that. Let's put that together with what you need to do for your maintenance and service. So that to us is a big win that's right around the corner, I think.

**[40:46] Jeanne Grunert:** Yeah, and it sounds like you've set the stage really well for that because you've worked out how you're going to build in that flexibility, connect the field services with your ERP, how are you going to enable all this data to flow and manage the data. So you set the stage for it. So it sounds like you've built a really robust base from which to build out.

**[41:08] Bryan Schappell:** Yeah, and that is the hope. We want to make sure, and I think that's really the key is people with database management tend to be so confined about who can see it, who can access it, how do we get to it, etc.

The second you open that up and realize that there's a lot of that, especially internally, you should and just make it easy to share. It just opens the doors in ways that you didn't realize, because they're over there gathering documents, they're gathering information about assets, they're gathering all this manually and putting it in their own database. And you think about the waste of that effort when you realize, well, but we have it all over here. We just never made it accessible.

**[41:46] Jeanne Grunert:** Yeah.

**[41:47] Bryan Schappell:** Yeah.

**[41:49] Jeanne Grunert:** That's great. So a question for you just before we move into the Q&A section for this, is there anything that I didn't touch on that you would want to say to somebody either sitting in your shoes or another company or dealing with these big systems or looking at a microservices approach? Or is there anything I didn't touch upon that you wanted to express today to our audience?

**[42:10] Bryan Schappell:** No, I don't think so specifically. The only one comment that I had made a note about was the fact of patience and involvement of the knowledge workers. We touched on that with some of the solutions that came forward and whatnot, but at the beginning, things do seem to move slow and you seem like you're investing in something that nobody asked for.

They didn't ask for this API, they didn't ask for us to connect in that way. They wanted a piece of functionality and there's a faster way to deliver it, and you're kind of forcing yourself to do it a slightly slower way and really think through where might this get us? When helping those knowledge workers, those developers really understand the vision a little bit more also, that equals speed and acceleration in the end.

And then the other part of it is when you do demonstrations back to the user community, back to the business owners, whoever you're showing this to, let the developers do that. Let them hear the feedback.

It's one of the most motivating things you see because they take that stuff back and you would have made the decision, no, that's too much, we're going to put that in the next phase. The developer says, no, I'll have that in five minutes, because they know exactly what it takes to change what they just asked for.

And they are really thrilled about hearing the positive feedback of, wow, I can't believe you did that. But it changes things. And like I said, that's what gets you the speed and the acceleration. If you try to accelerate things on your own, I think it's really fake. You're forcing something to happen that really isn't happening yet. But that patience, that involvement really, in my opinion, is what gets you to that speed.

**[43:52] Jeanne Grunert:** And I think having a leader as well who's open to it, who's open to participation and looking beyond the box and having the patience just sort of say, "Okay, it's okay to try this. We can try this. We can set it aside if it doesn't work." I think that's also really critical to it. So that's a compliment, Bryan. You're that leader, so thank you for that.

So, at this point, I would like to open up the floor to questions, Bryan, if there's no other points that you wanted to raise here. So, audience, if you have any questions for Bryan, please tap the QA button at the bottom.

I have a first question here, Bryan. I'll read it out loud to you and see if you can answer this for our audience. The question is this: "Is your company strictly promoting services related to ERP only or does your company get involved in TMS systems as well?"

**[44:48] Bryan Schappell:** Did you say CMS systems or?

**[44:50] Jeanne Grunert:** T like Thomas, MS systems. I'm not sure what that...

**[44:57] Bryan Schappell:** I'm not sure I understand the answer.

**[44:59] Jeanne Grunert:** Yeah, attendee, if you can clarify that with the QA button, that would be helpful. Transportation Systems. So, I thank you, attendee. So, he's asking if you had to work with ERP alone or transportation systems as part of the work with the ERP?

**[45:15] Bryan Schappell:** No, we don't generally work with transportation systems. I'm trying to think if there's any... There are some overlaps in a couple of our divisions, but we haven't really dug into a lot of that from my perspective. No.

**[45:28] Jeanne Grunert:** Okay. Thank you, attendee and thank you, Bryan, for answering.

**[45:31] Bryan Schappell:** Other than the scheduling side of things, to some degree, but yeah, not...

**[45:36] Jeanne Grunert:** Would that be scheduling like field service technicians and things like that?

**[45:39] Bryan Schappell:** Yeah, scheduling visits, service, travel, things like that.

**[45:43] Jeanne Grunert:** Delivery of equipment, things like that.

**[45:47] Bryan Schappell:** Not the actual travel, but that they... Getting it all working together so that I know when somebody's going to be available and in a location, and whatnot.

**[45:55] Jeanne Grunert:** Thank you. If we have any other questions, please kindly tap the QA button at the bottom of your screen. Attendee says, “Thank you, Bryan.” And please enter your questions in at the bottom. I have one other question here.

Someone asks: “I’ve had trouble getting internal buy-in to begin a similar project. How were you able to engage internal stakeholders in the process and do you have any advice if you run into problems getting buy-in?”

**[46:24] Bryan Schappell:** Yeah, I think for me that the, I guess, luck we had is when we started this journey, we had a lot of business owners that were very interested in getting involved. And in many cases, they were naysayers, which was honestly great because we then said, “Look, you’re part of the journey now.”

In other words, you’re going through the training, you’re going to call the shots in a lot of ways about the work we do. In other words, when we put our backlog together of the things we’re going to work on over this next 10 weeks, your job is to help me get it in the right sequence from a business value perspective.

Then we’re going to put size against that and we’re going to put things in a sequence of order based on the rules that we utilize with the scaled Agile. That was really useful because they could start to see things come into an order.

They didn’t always agree with the order, but it was really kind of fun to watch the process play out and then to build that trust over time that this is making sense. It’s allowing me to get value faster. It’s allowing me to get things out the door into our users in a different way than we’ve seen in the past. And the users were giving them better feedback.

So, by literally forcing them, you know, our product managers in our case, in most cases aren’t IT individuals. And in some cases, our product owners aren’t. We literally will take people from the business and say, “Hey, if you’re that interested in being involved,” and they’ll say, “Yeah, we are, we really want to be in the middle of this.” “That’s great. Let me give you a role. This is now your job and I need you to do this well. I need you to be trained and understand how things are supposed to work.”

But they tend to be part of the solution. And it’s like anything else. If you involve people and give them the opportunity to be part of it, to make decisions, they tend to help make things work on their own. If you inflict it on somebody, it is a lot harder to push that rock up the hill.

**[48:17] Jeanne Grunert:** Great point, great point. We have another question coming in from the attendees. And that is: “What advice would you have for other companies looking to shift from a single monolithic platform to a microservices approach?”

**[48:31] Bryan Schappell:** I think at the start of things, you obviously need some leadership support for doing that because it is a journey and you start to really need to work on groups that are very mature and formed, and you’re now going to try to help them kind of splinter or decentralized some of that activity.

The other thing is you have to realize and admit that when you’re doing you know more of an Agile and more of a microservice approach, there’s a danger of missing checkpoints. And we’ve seen ourselves swing the pendulum a little too far one way or the other, where we’re not necessarily doing everything we should, probably for security. We need to get more of that embedded into our teams, “Okay, great, let’s take that action and make that change,” but you see that, you know, but you want to be very open and transparent about it again. The more you hide or your defensive about things, the more you become a target in the organization, I think, and it becomes more difficult to do that.

And then the other side of it is to see value of shifting priorities and business need quickly because you can make quicker adjustments. They will see value quickly, but you’re also going to need to ignore some cost, which is tough still, especially when it’s on a smaller scale. “I only need a little more week to develop this,” but is it truly what you should be developing right now?

Based on what you just heard from the business and what you’re going into for the next 10 weeks, do you finish what you were doing the last 10 weeks, or do you say you know what, we’ll come back to that maybe if it becomes the higher sequence item of work, but that some cost is less relevant than “can I deliver something that’s really going to help the business move forward?”

They will see that you’re doing that, and in some cases, they get upset, “Look we spent all that time and money, why wouldn’t we finish it up?” But since you’re doing things in a smaller scale, it’s a little less painful, number one, but number two, they do start to see that, oh, yeah, but I’m getting something else. It’s not because they just threw it out the door and put it on the show.

I don't know if that makes sense, but, for me, that's been an area that has helped a lot, is really keeping them aware, keeping them informed, being transparent and being able to shift a little more effectively when I need to.

**[50:57] Jeanne Grunert:** Thank you. I had a little clarification behind the scenes on that question related to transportation management systems. The question was actually for rSTAR, and the answer is, yes, rSTAR actually does work with transportation management systems, extending them, as well as the RP systems. So if you have any questions or needs in that area, we welcome the opportunity to speak with you. So, it was just a redirect of the question.

Attendees, any other questions? Remember you can tap the QA button at the bottom of the screen and post your questions in the little box that opens up. One question, and I think we covered it, but perhaps we can rephrase this and that is: "How does an Agile methodology compared to Waterfall? What are some of the benefits and what are some of the drawbacks of implementing Agile? Did you have any resistance in that front too?"

**[51:48] Bryan Schappell:** I mean we obviously have resistance to any big change like that. And Agile in general, the biggest things are we can't do, for example, two-week iterations. Our development cycle takes too long, our testing cycle is too big. You can't actually make things fit into that model.

And so at first what you see is people kind of modifying the model to make it work for what they perceive is a restriction. As you work along things, what you find is you actually can do a lot more of that and this goes back to, in many cases, the ability to talk to the knowledge workers, the people who really understand what they're doing on a day-to-day basis and ask them not to do it. But ask them how could we do it? What are the things you think we could do to maybe get closer to this recommended model? They'll give you answers that you didn't realize existed.

And that, to me, was one of the most valuable pieces of this, is we had pieces of our organization where even the leadership didn't believe we could do what we do today. There was no way that was ever going to work in our model and with the tools that we work with because we're touching our system of record.



And what we found is we could and it took the developers to actually show the leadership, and they literally said, “Look, why don’t we show you what we think we can do,” and the leaders basically, said, “Okay, I want to see it. I want to...”

And they were really thrilled that that was coming from that level of the organization, and they were excited to show me what they had come up with. So that, to me, was really cool. But your leaders are going to be just as resistant as your people.

And the other thing is, demonstrate to the lowest level possible, as early as you can, the change you’re making. Communicate, communicate, communicate. Change management, in general, and I remember this from years ago and a couple of bad examples where management, we were all talking about something for six months, and then we gave our people literally a month to buy in.

And we wonder why they struggled to get up to speed. Heck, it took us six months to get up to speed and accept the change and really embrace what we think we were going to try to do. And then we asked our team to do it in a month, and then people below them, maybe a week.

Well, of course, it didn’t work very well. And as a result, what I learned from this is, tell them upfront, this is where we’re going. No, don’t change today. This is what’s going to happen. Learn a little bit about it. Let’s talk about it on a regular basis.

And then, like I said, when you run into those barriers where it can’t be done that way, not in our environment, ask the people doing the work. Quit asking the leaders necessarily, or ask the leaders to go ask their people. Go ask your team, how might they do it? Do they have any ideas? Because you’ll be surprised what they come back with.

**[54:41] Jeanne Grunert:** That’s wonderful advice. Thank you. I had one other question that’s similar to that, and that is: “Did you have any KPIs or metrics that you wanted to hit? How did you measure these as part of your project?” I guess they’re asking if there’s any kind of KPIs or metrics that you had put in place to measure the change from moving from that.

**[55:00] Bryan Schappell:** Yeah, there’s so many KPIs and so many metrics around Agile and software development and whatnot that you obviously want to keep an

eye on. But you have to be very careful, in my opinion. And this is something I learned in a bad way in manufacturing, which is what you measure will deliver results. And it may not be the result you wanted. because people drive to measures just accidentally. They do it as a natural thought process.

So, when we looked at our measures, the biggest one that we found was valuable was just simply the predictability. In other words, are you going to do what you said you're going to do and how close to that can you come?

So, hitting between 80 and 100% is really the goal with scaled Agile of what you predicted as far as when you get done with your planning session, you've got objectives that you're going to achieve, 1 to 10 objectives per team. And you're going to see how close you come to the business value that the business said each one was. This one's going to give me five, that one's only a two, it's not as much value, etc. But at the end of the day, what is the percentage?

And when you look at that number, the irony is with Waterfall...This is probably going to sound rude to some people, so I apologize if it does. I don't believe we ever hit schedule well, we just descoped things and extended things and changed the budget and some people just worked harder.

But in all honesty, when you got to the end of the day, what the business thought they asked for was different than what you delivered anyway. What you find with scaled Agile is number one, they're seeing it regularly through the development cycle, they're making changes, and they're asking you to do rework.

But at the end of that, if you show them that you delivered 70 to 80% of what you said you were going to deliver, you'd be amazed how thrilled they are with that. It's amazing, and it seems like, wow, I fell short. But you actually didn't fall any shorter than you were before because what they got was actually what they wanted.

They were able to adjust, they were able to give you feedback along the way. And so that 70%, even if you miss the mark, you don't hit your 80, they're thrilled with it. And it really does drive a lot more trust that you know what you're doing, that the team's going to deliver things than you can ever imagine. And that, to me, was very significant in learning.

Yeah, we could have measured velocity a lot more and put that out in front of people. We could have measured a lot of other things as it relates to these defects. I mean, we track that stuff, but we're careful about how publicly we advertise and communicate and, once again, using the stick versus the carrot, we want to make

sure that what we show the businesses is, we told you we deliver this, and we delivered really close to thatm as far as the amount of value.

**[58:00] Jeanne Grunert:** That's fantastic, thanks. That's wonderful knowledge, we appreciate that. So again, if there are any further questions from the audience, please tap the QA button, and we'll give people a chance to ask. So just about at the time, but we'll give people a chance to ask any other questions that they may have. I have a feeling we might have answered or preempted some of the questions because you've been great at sharing information, Bryan, thank you.

**[58:29] Bryan Schappell:** It's a fun journey, and that's the thing. You have to enjoy it and let the team have fun. They really like to get involved in this sort of thing, but they will make mistakes.

So if that's, once again, I can't say that enough, you've got to be careful how you respond to those, and then you will get their buy-in and their motivation, and they'll make things work that you can't imagine you could solve.

**[58:53] Jeanne Grunert:** I think people learn better after they make a mistake actually than if you tried to preempt everything. And it is amazing what people can come up with when they feel like they're free to explore different solutions, not necessarily what they were told to do, like they really do a good job.

**[59:10] Bryan Schappell:** Well, and if you think about that, it requires them to realize that they were probably supposed to work on something else because they were supposed to be beyond this problem already, and they're going to have to spend some time pushing something out while they solve this problem.

That, in itself, creates a bit of fear and angst. If you're measuring the wrong thing, you might get the wrong result, "Okay, we weren't able to solve this. We did all this other work, but it's all kind of superficial compared to what I really needed."

And that becomes the key, can you help them feel comfortable in the right moments doing that? And, once again, transparency; you don't want them doing it in a closet and nobody knows what they're doing, but at the same time, they feel trusted that you'd tell them if it's not the right thing.

**[59:57] Jeanne Grunert:** Yeah, it's important. Well, guys, I think we're at time now. Bryan, you're awesome, and we really appreciate you. Definitely one of our manufacturing All-Stars and our IT All-Stars. And just thank you on behalf of rSTAR Technologies for sharing your knowledge with us today.

**[1:00:13] Bryan Schappell:** Yeah.

**[1:00:14] Jeanne Grunert:** Really appreciate having you here. If anyone is interested...

**[1:00:16] Bryan Schappell:** Thank you for all the support you guys give us.

**[1:00:18] Jeanne Grunert:** We're glad to do it. We're happy to partner and support your creativity and initiatives at Emerson. So, if anyone is interested in learning more about rSTAR Technologies, you can visit our website at [www.rstartec.com](http://www.rstartec.com). We're happy to help. We're happy to answer any questions that you may have in your journey as well. Thank you, Bryan. We appreciate you today. And everybody, thank you so much for coming.

**[1:00:43] Bryan Schappell:** Thank you.

**[1:00:44] Jeanne Grunert:** Bye-bye.